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No. 4,289 83rd YEAR

THURSDAY, SEPTEMBER 7, 1961

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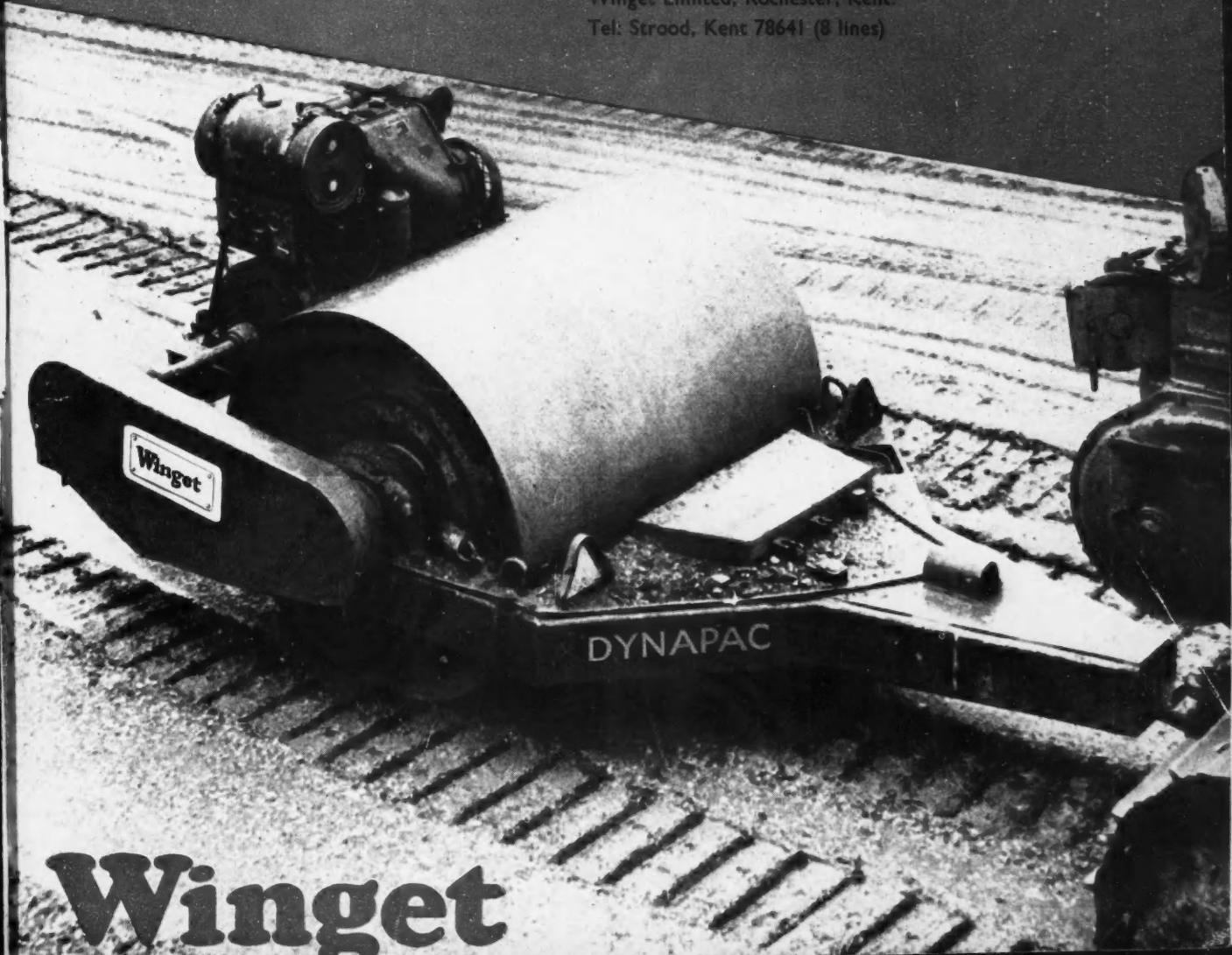
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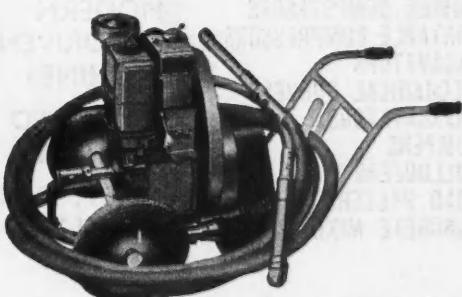
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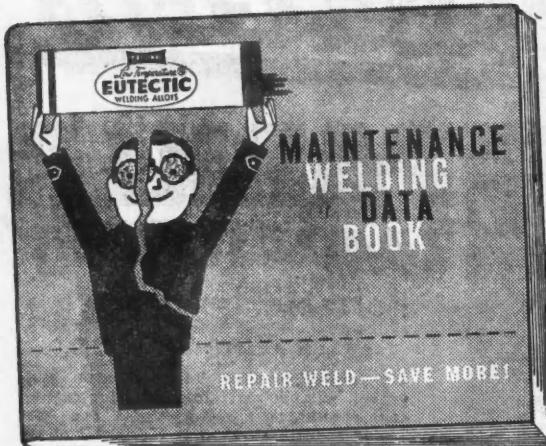
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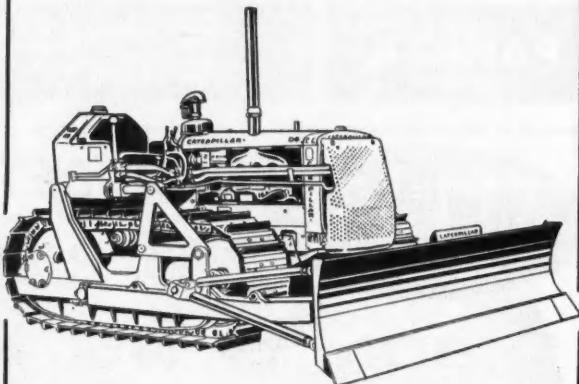
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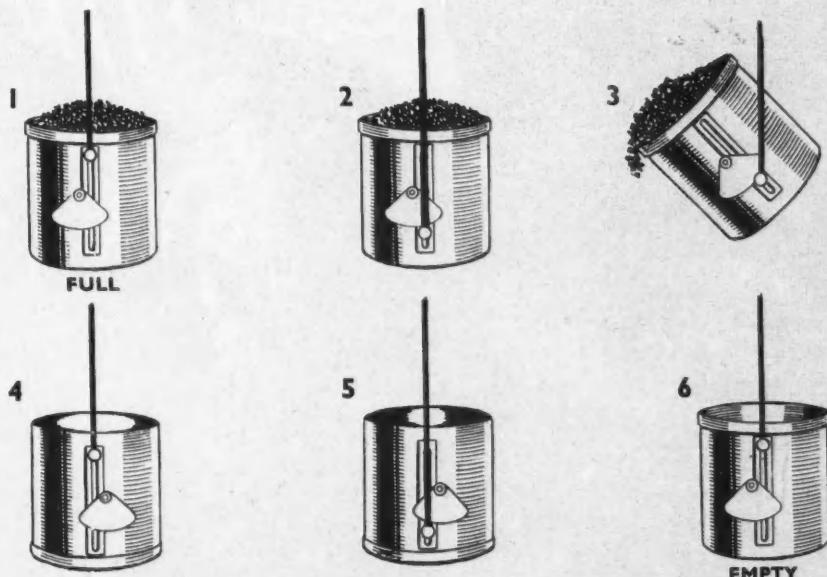
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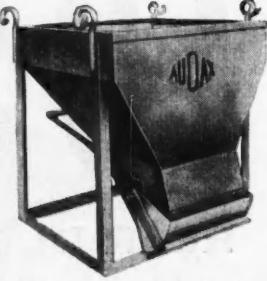


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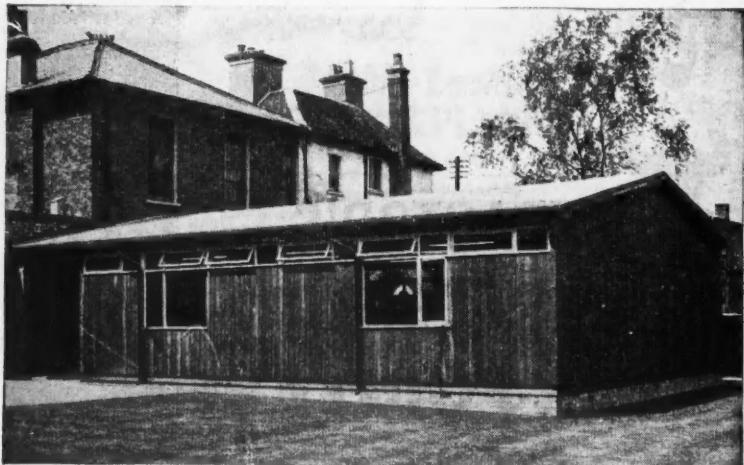
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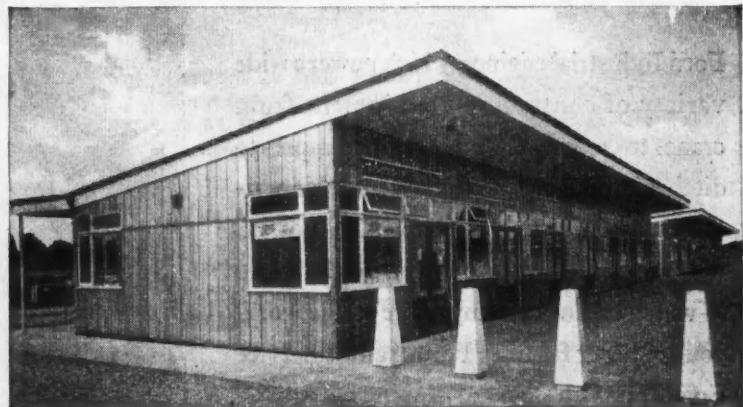


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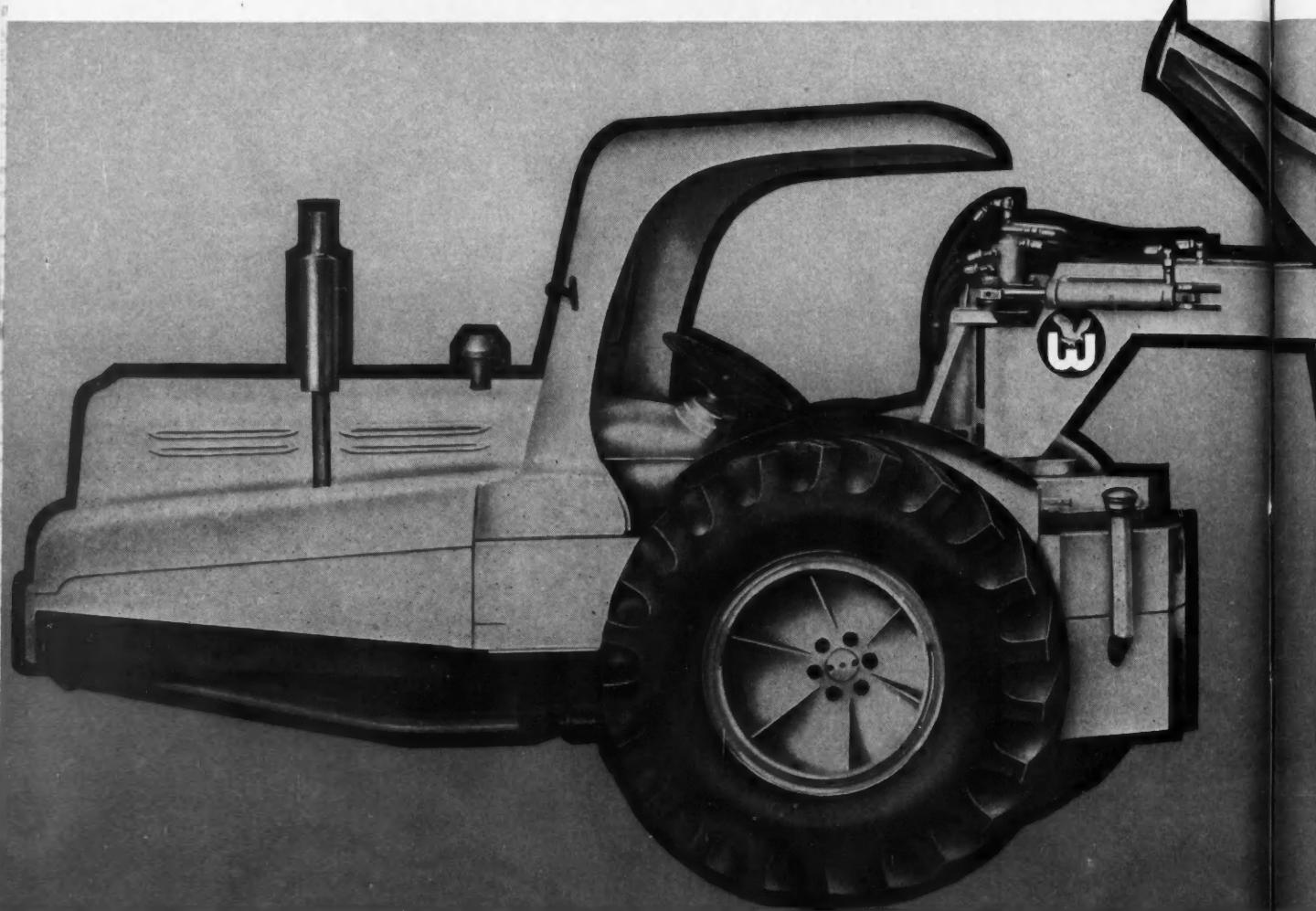
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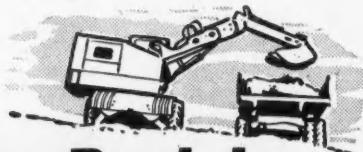
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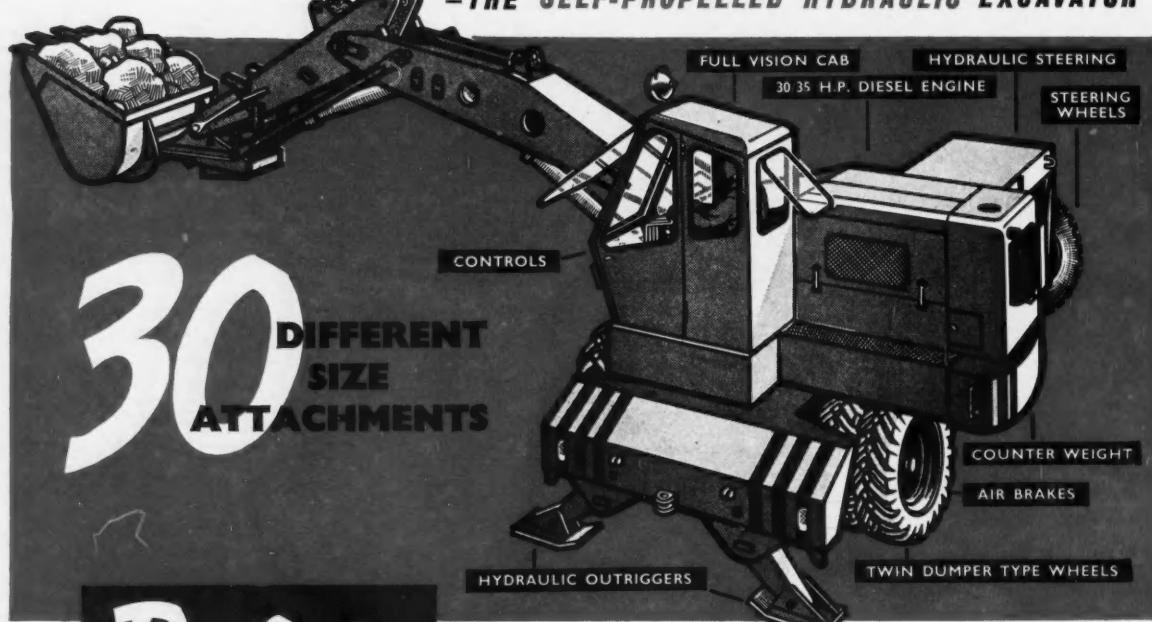
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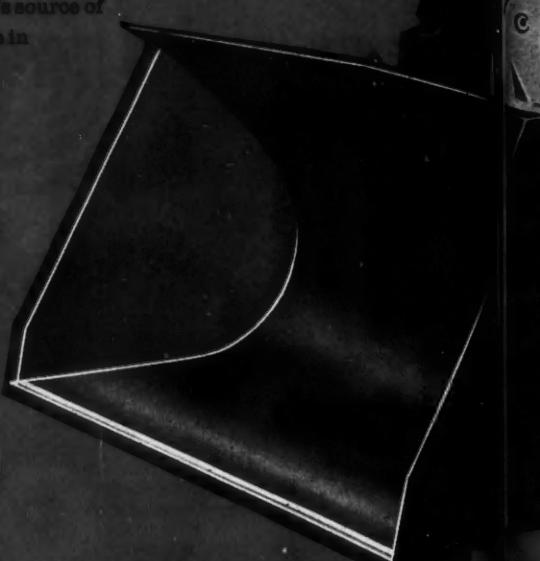
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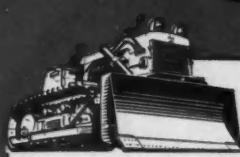


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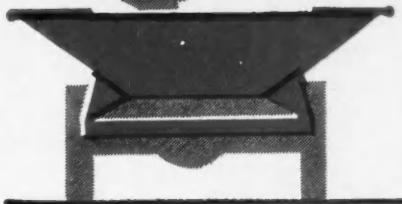
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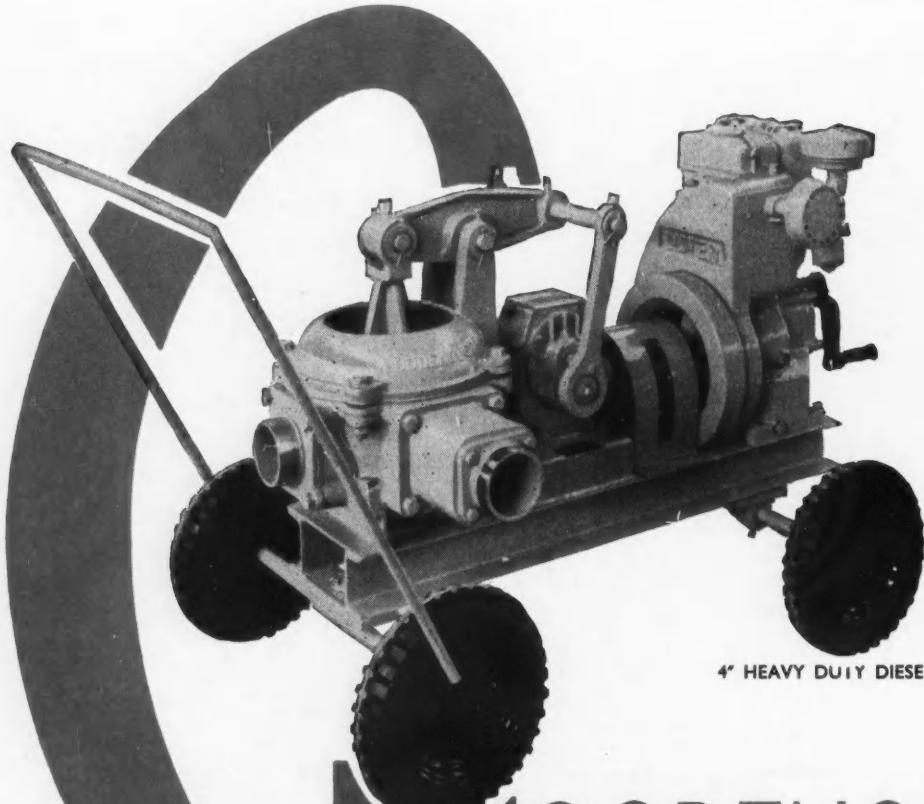
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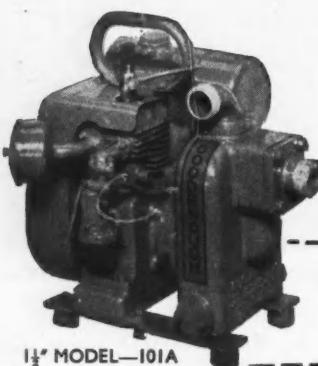
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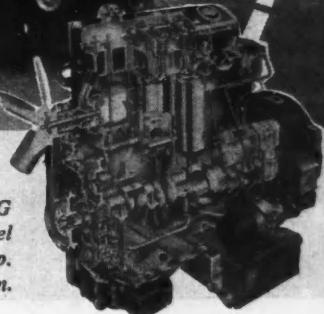


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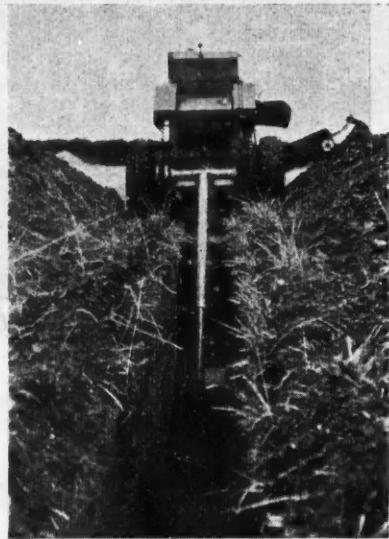
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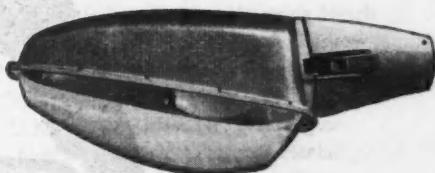
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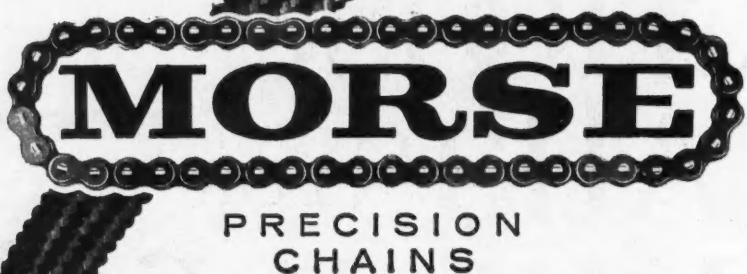


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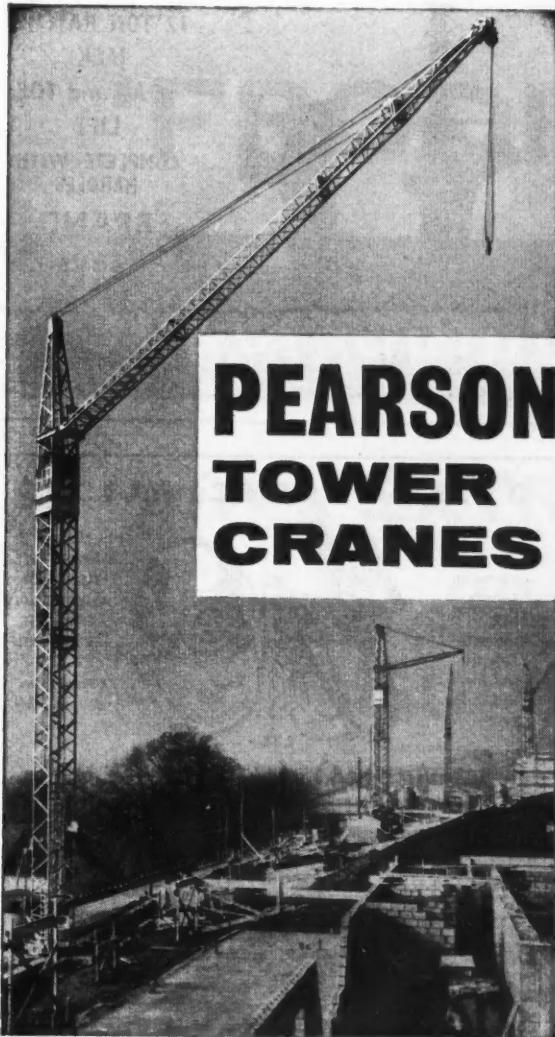
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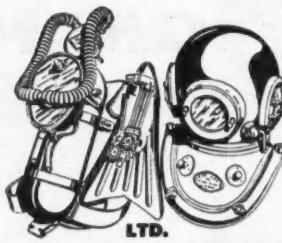
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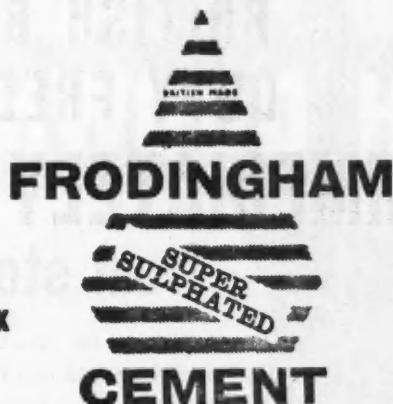
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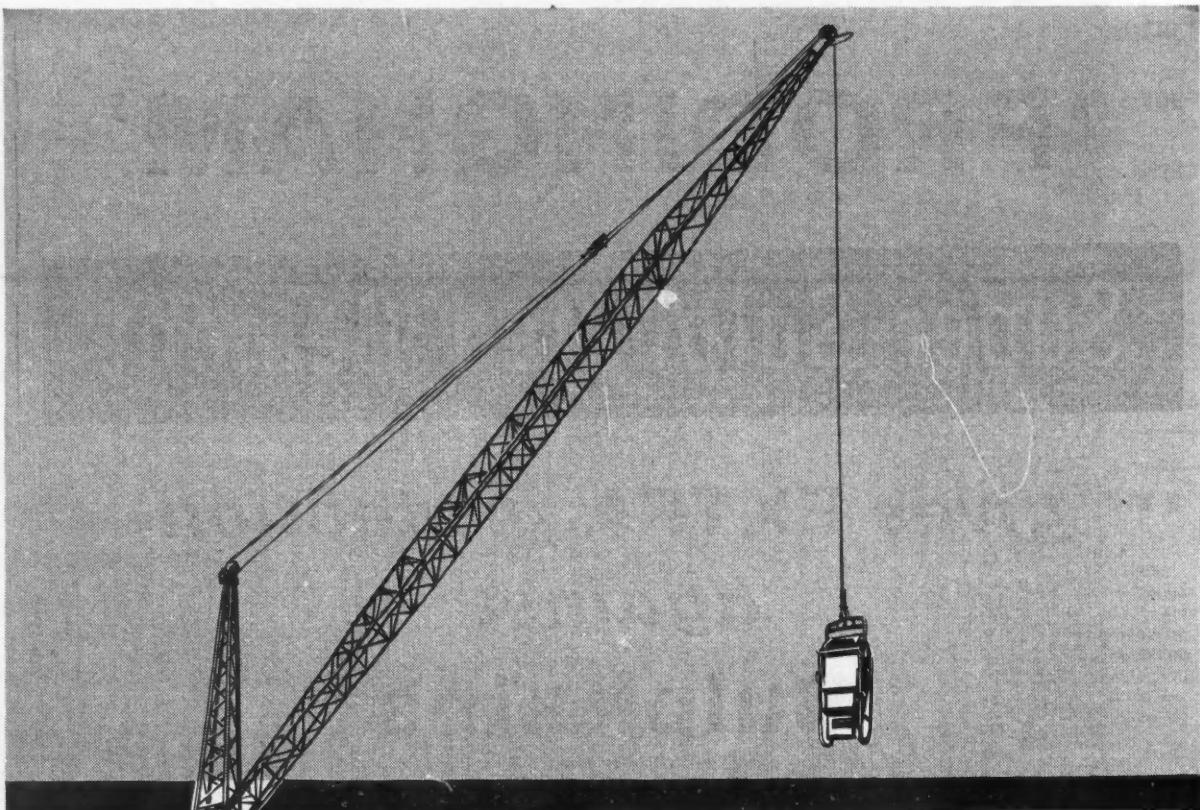
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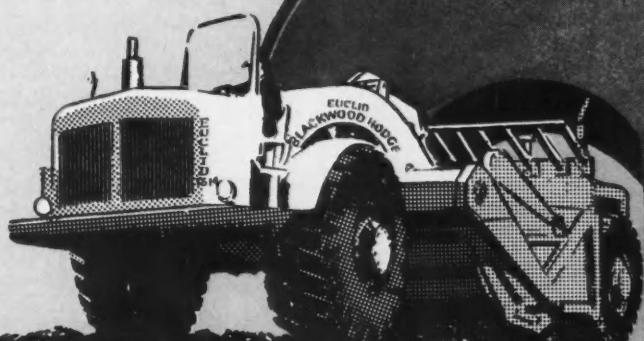
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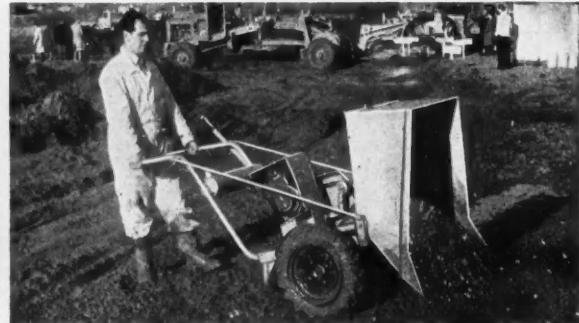
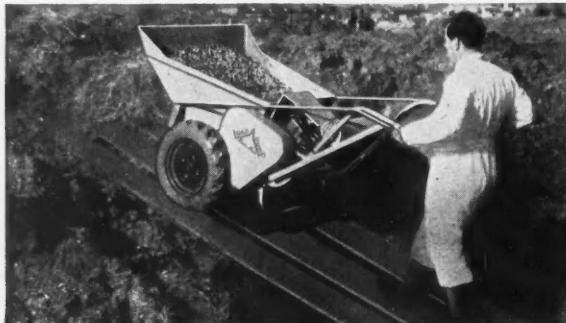
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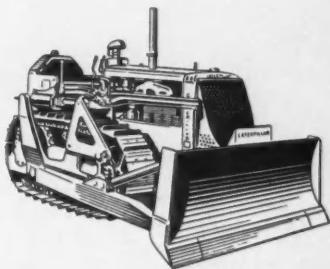
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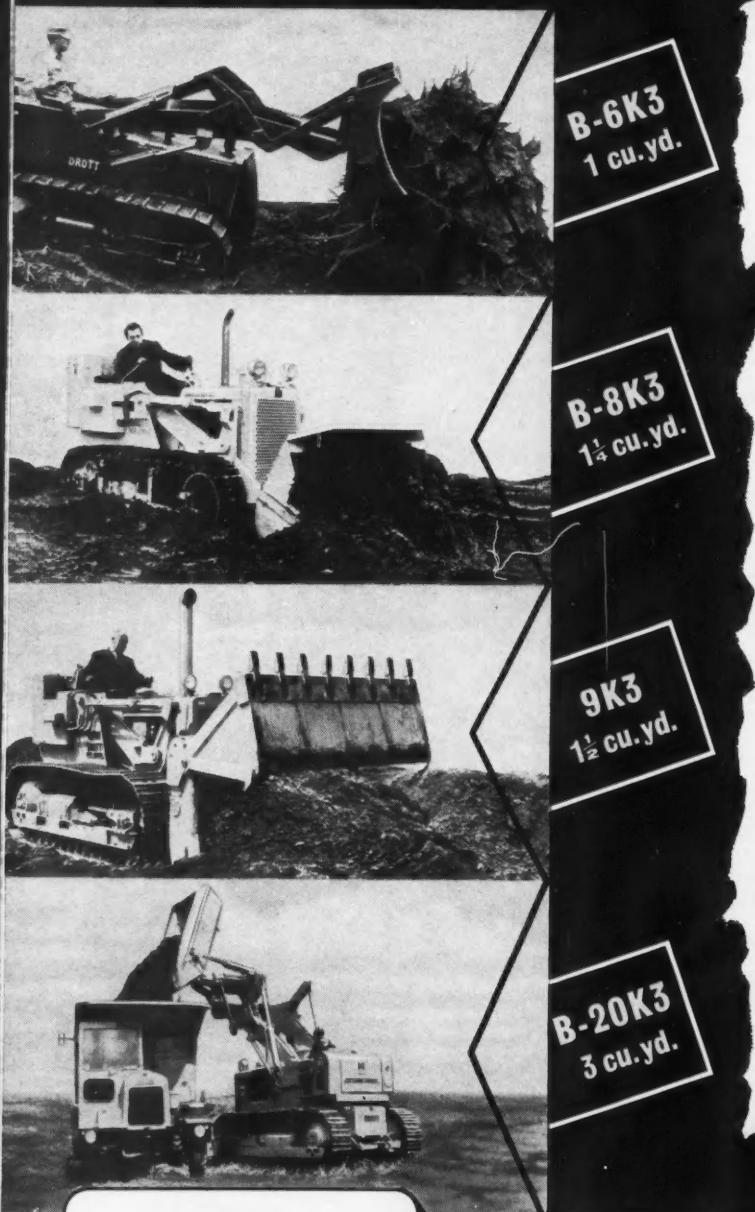
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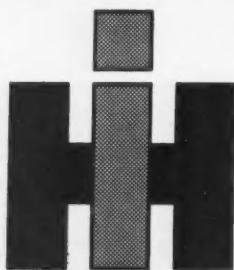
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**TABLE SHOWING COMPARATIVE
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BUCKET CAPACITY (cu.yds.)	1	1 1/4	1 1/2	2 1/4	3
B.H.P. (at engine flywheel)	50	60	71	115	124



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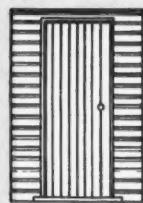
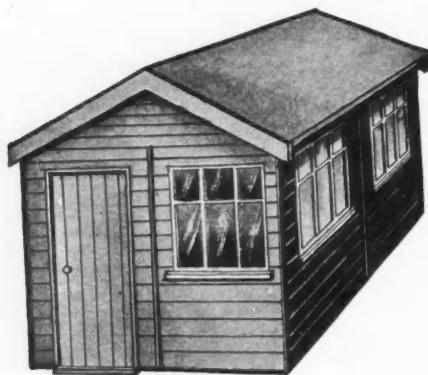


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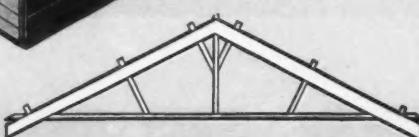
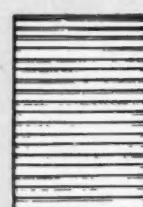
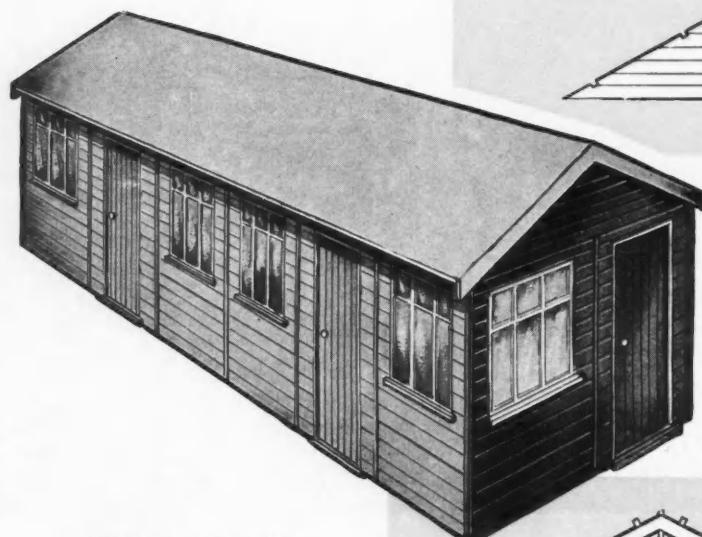
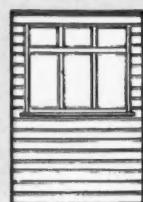
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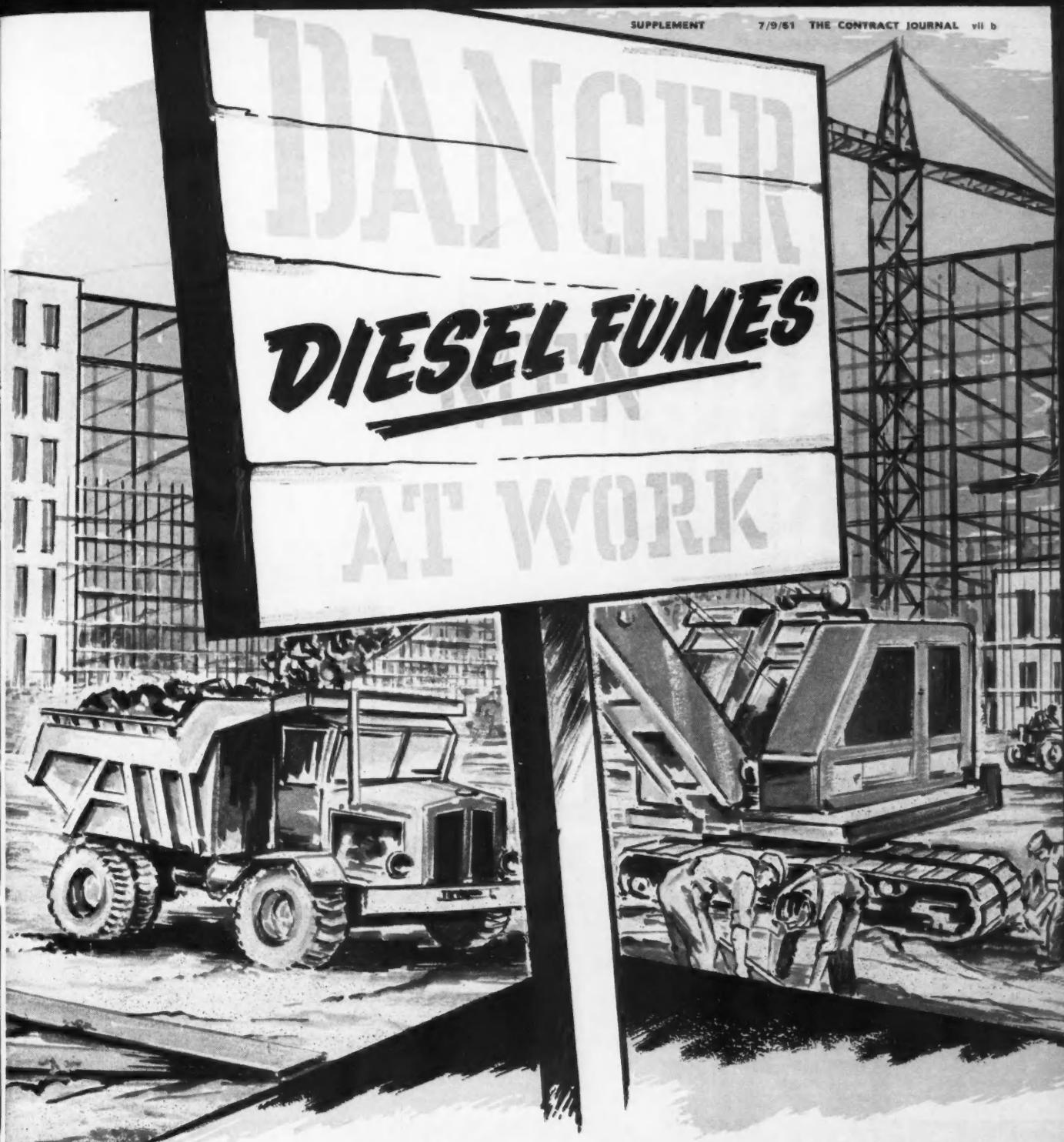
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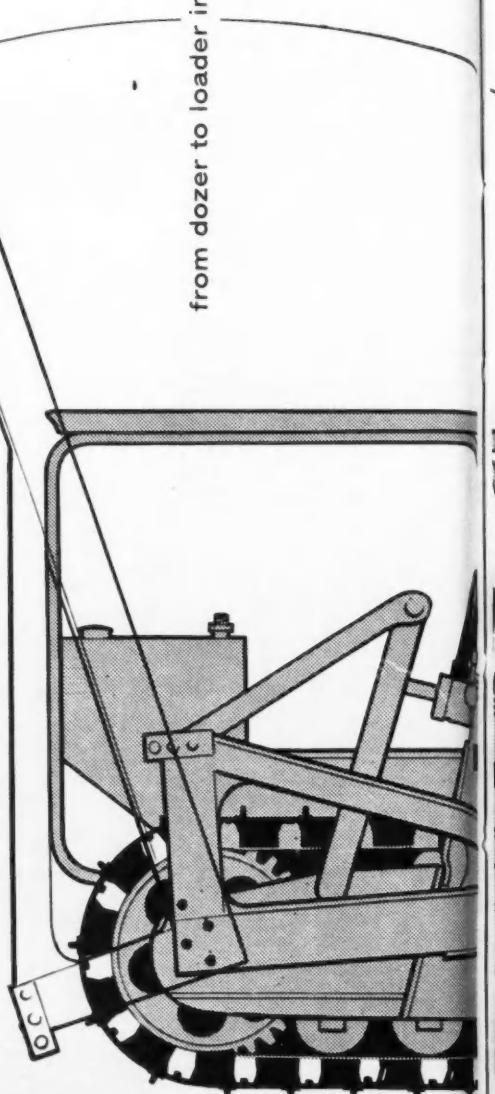
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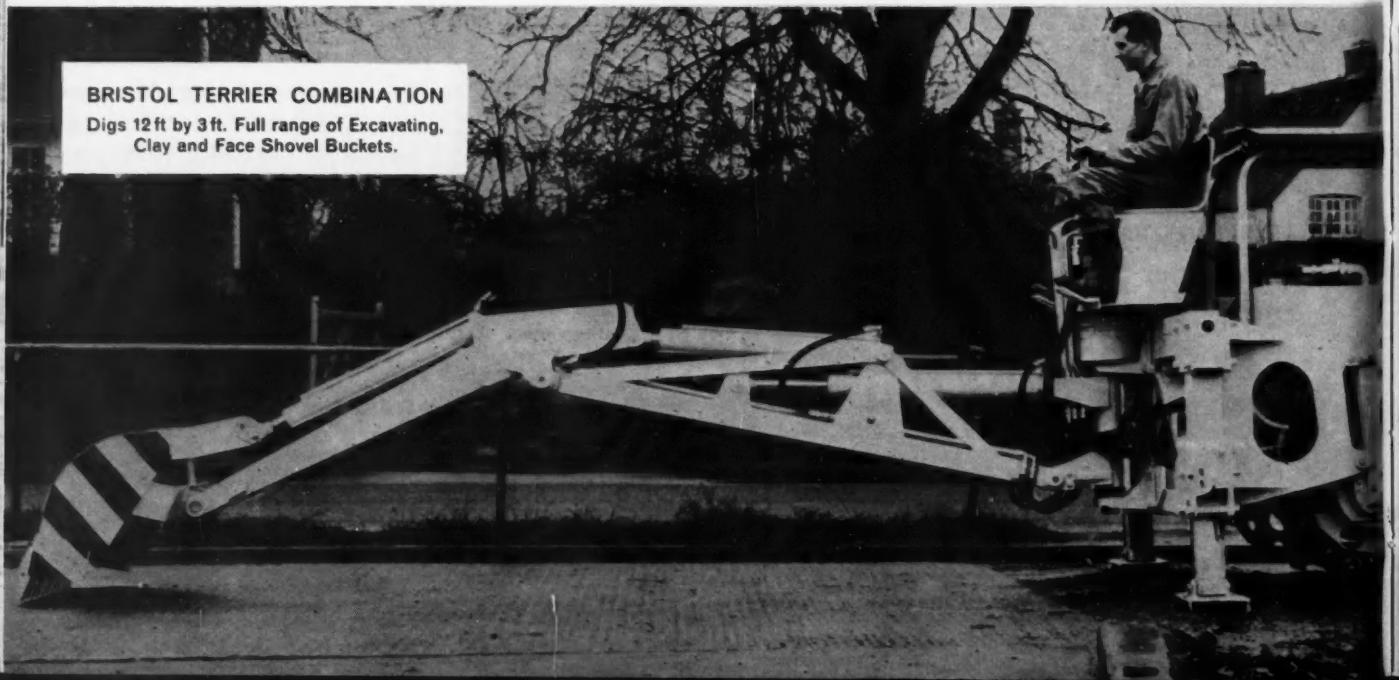
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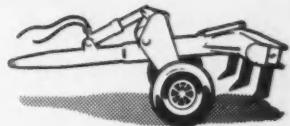
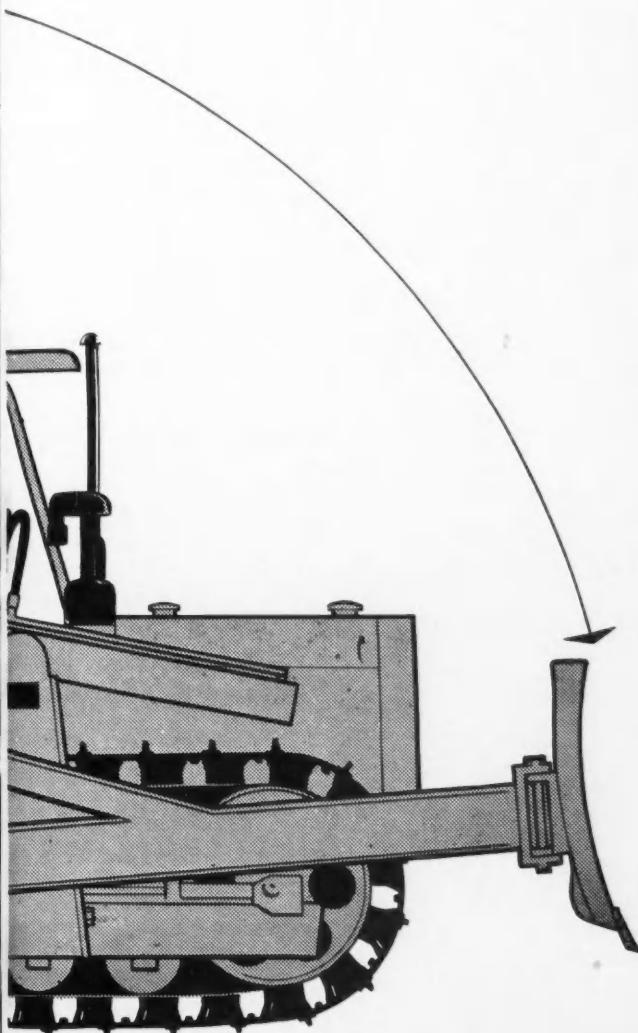
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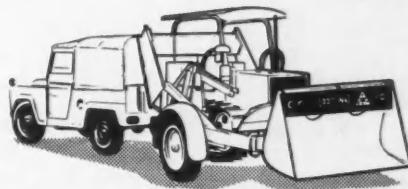
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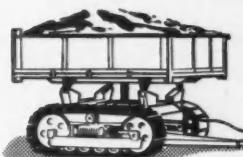
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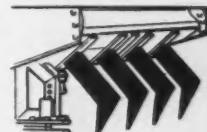
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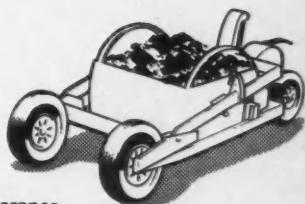
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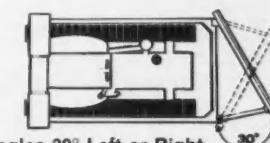
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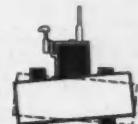
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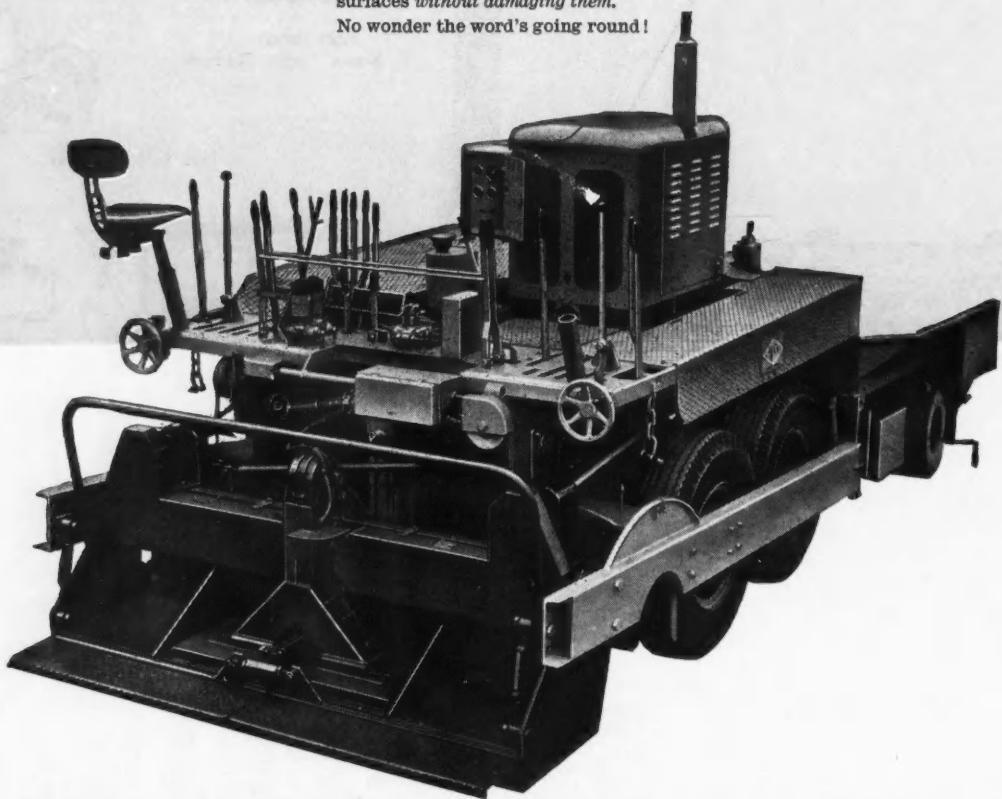
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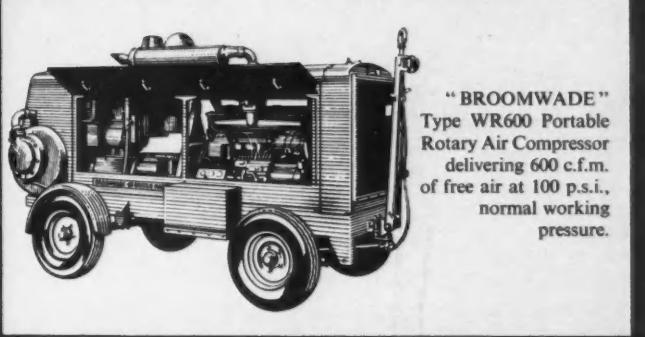
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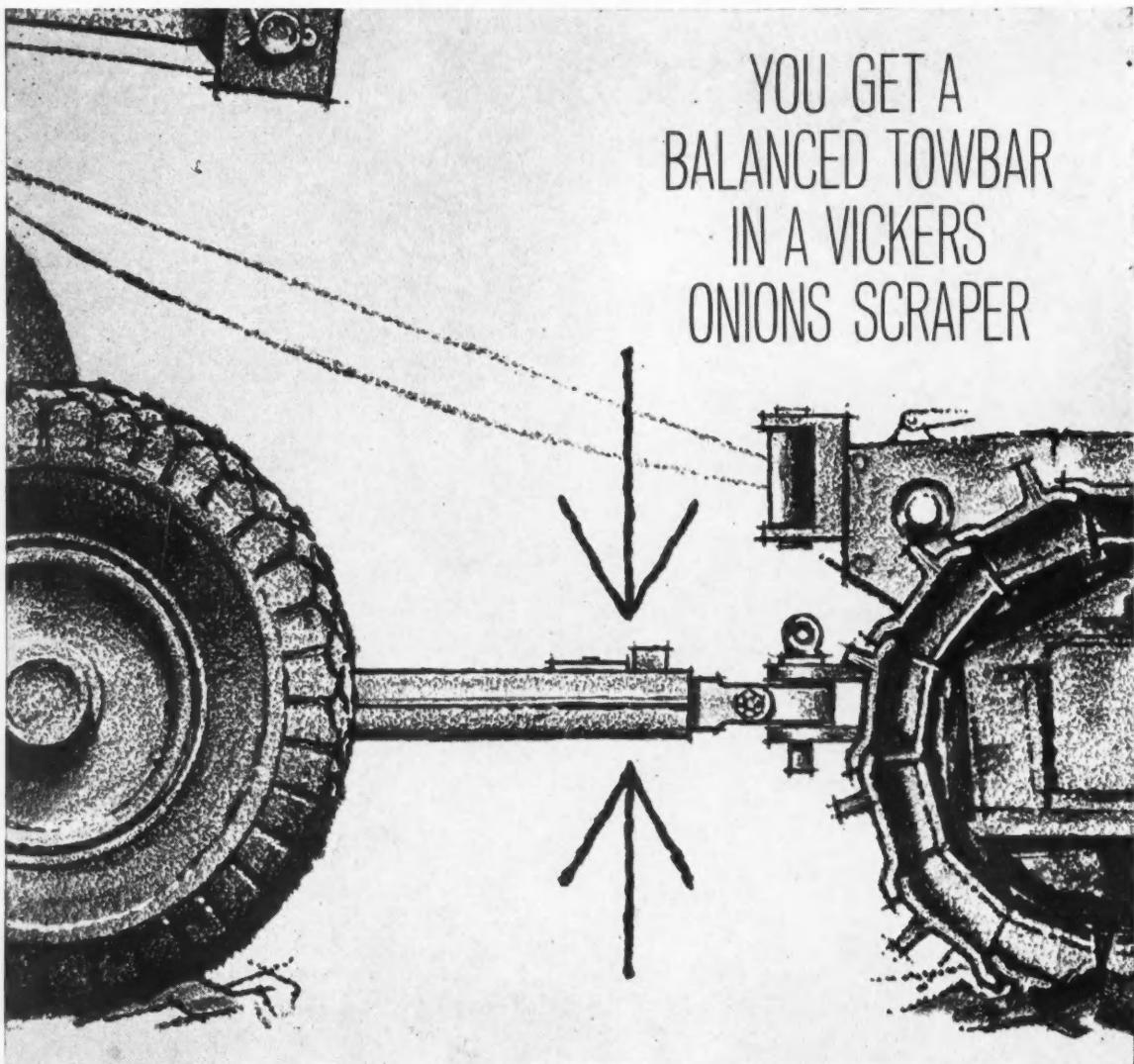
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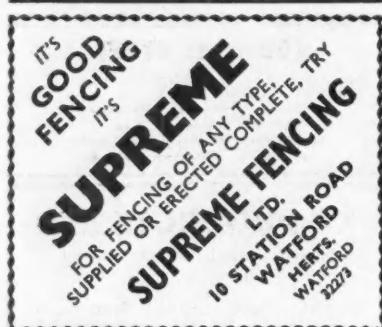
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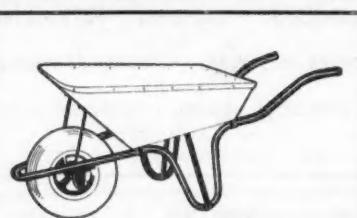
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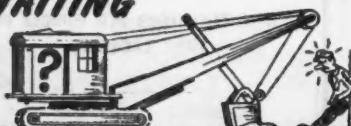
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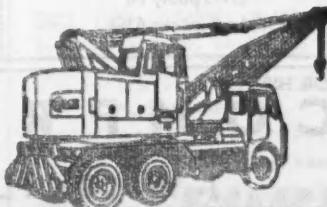
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EXCAVATOR, rear end only, 24in., 18in., 36in., 41in.,
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All machines in excellent condition, may be seen
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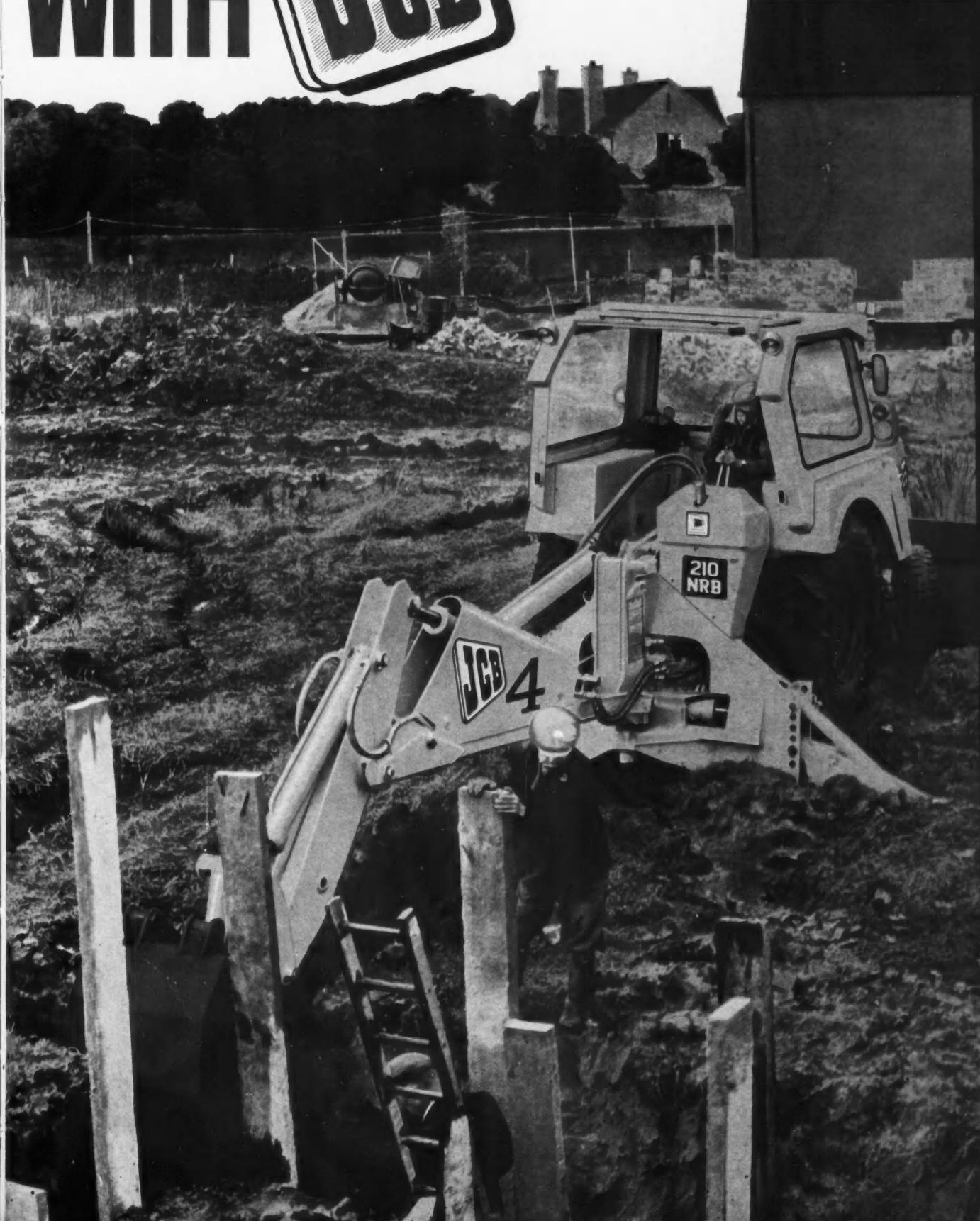
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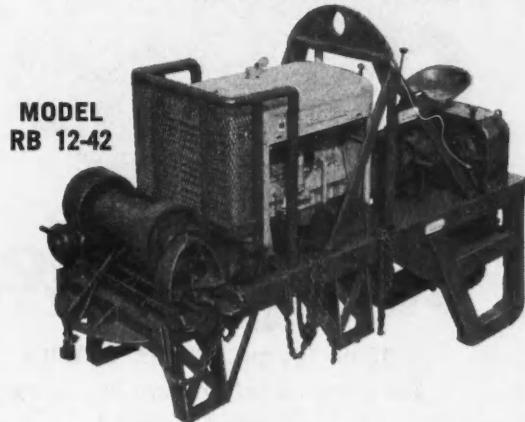
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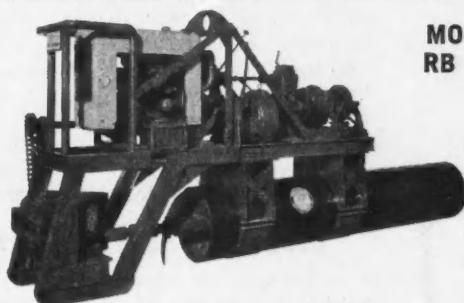
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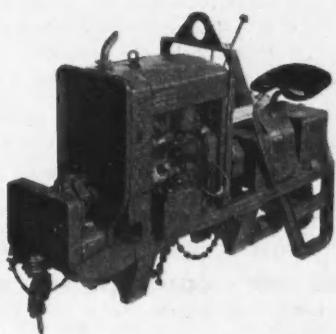
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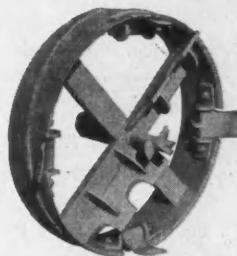
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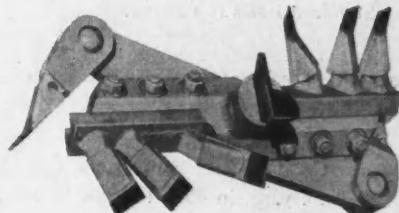
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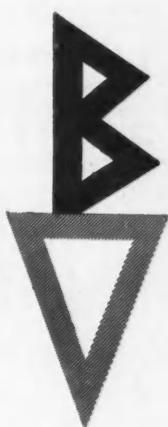
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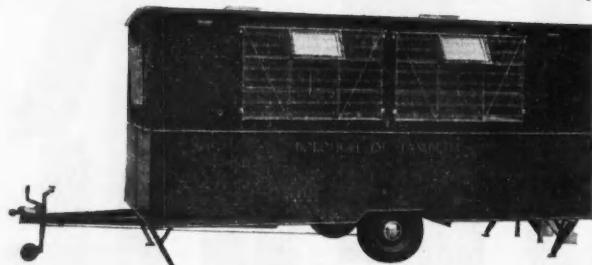
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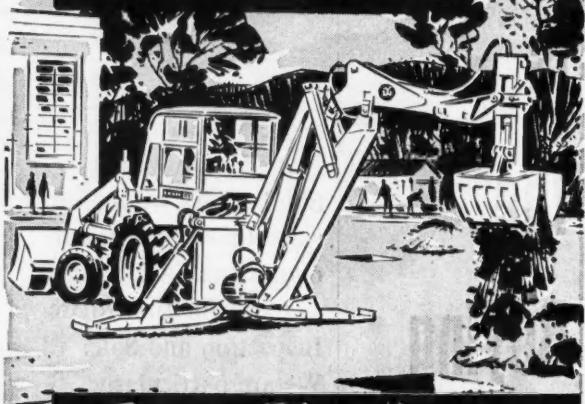
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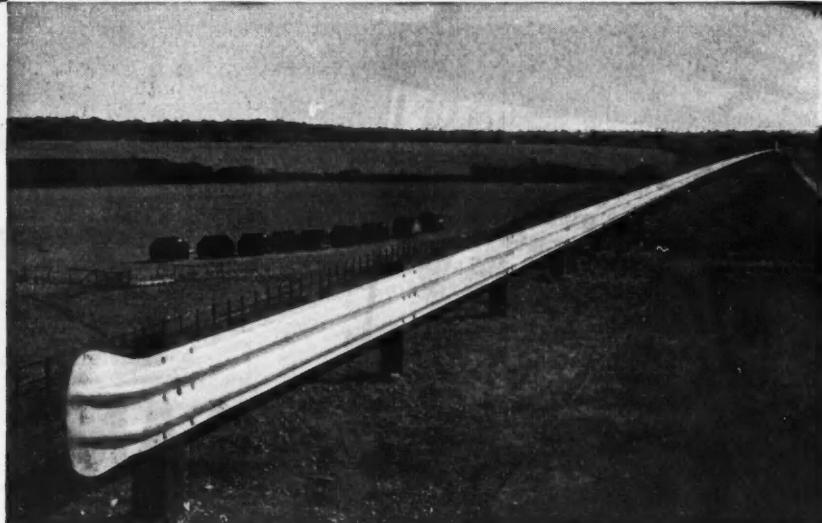
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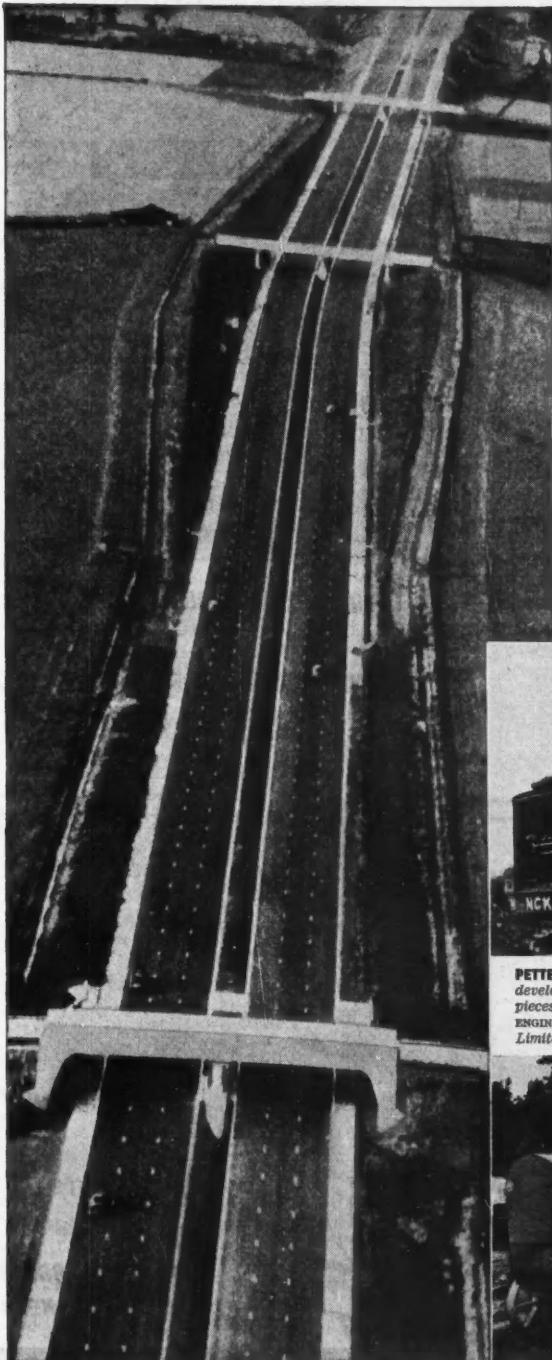
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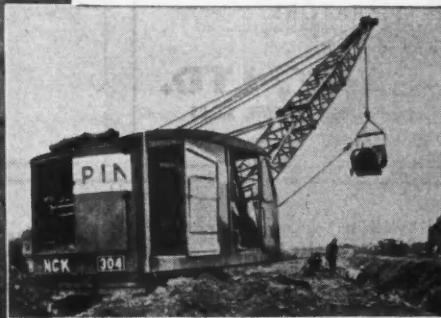
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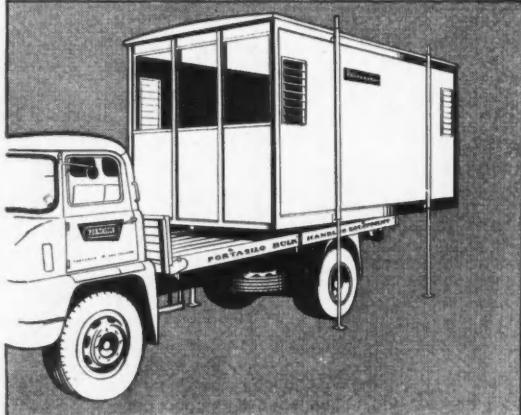
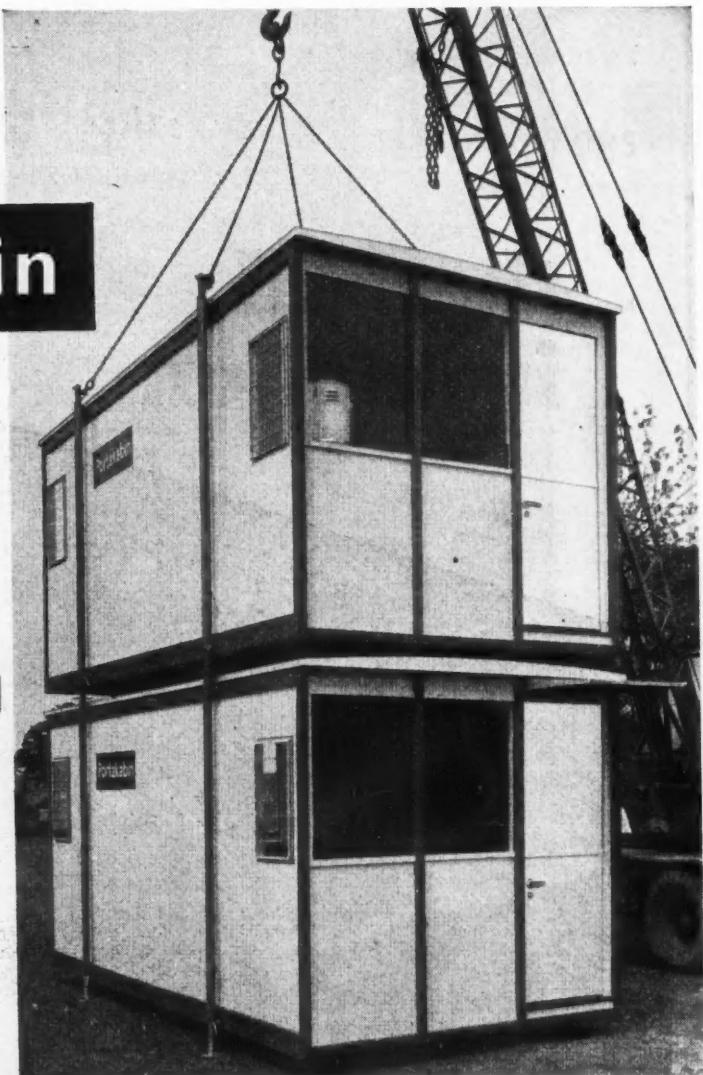
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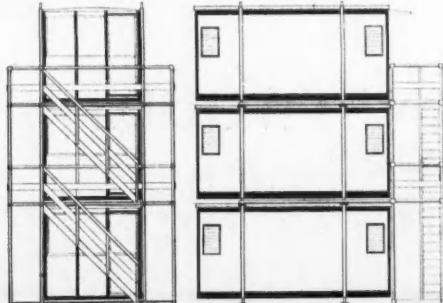
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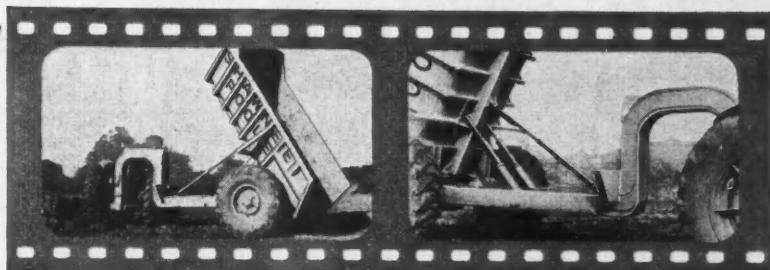
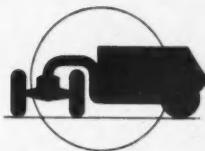
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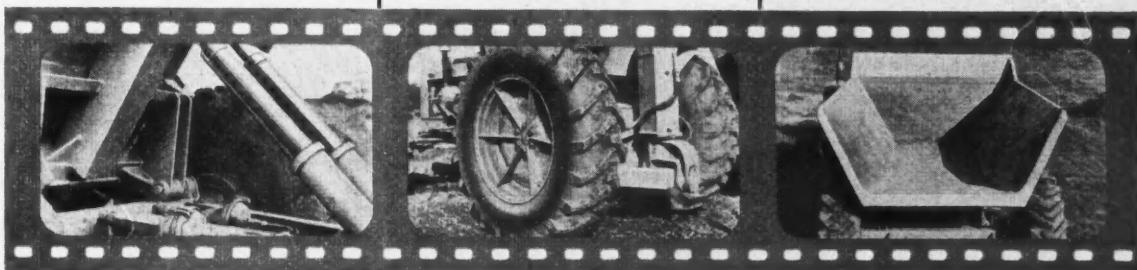


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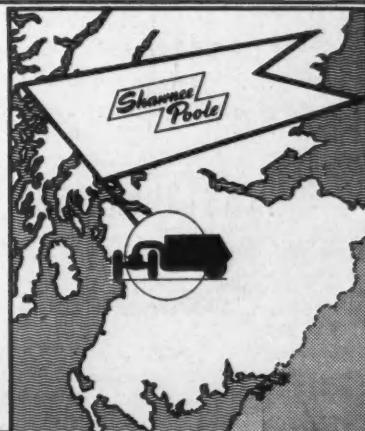
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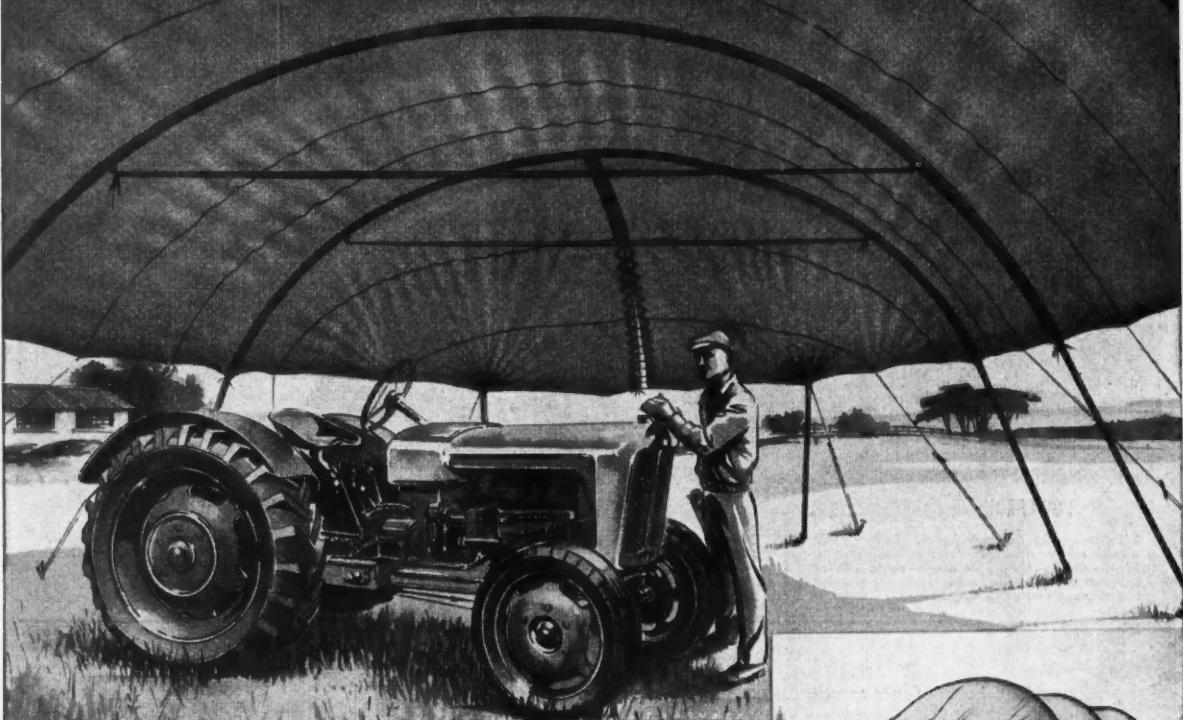
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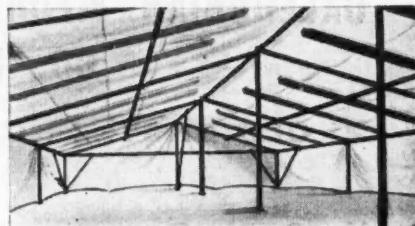
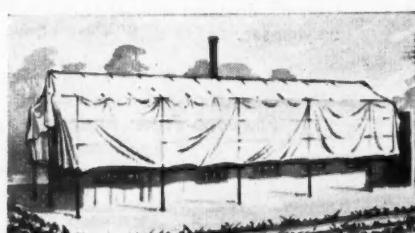
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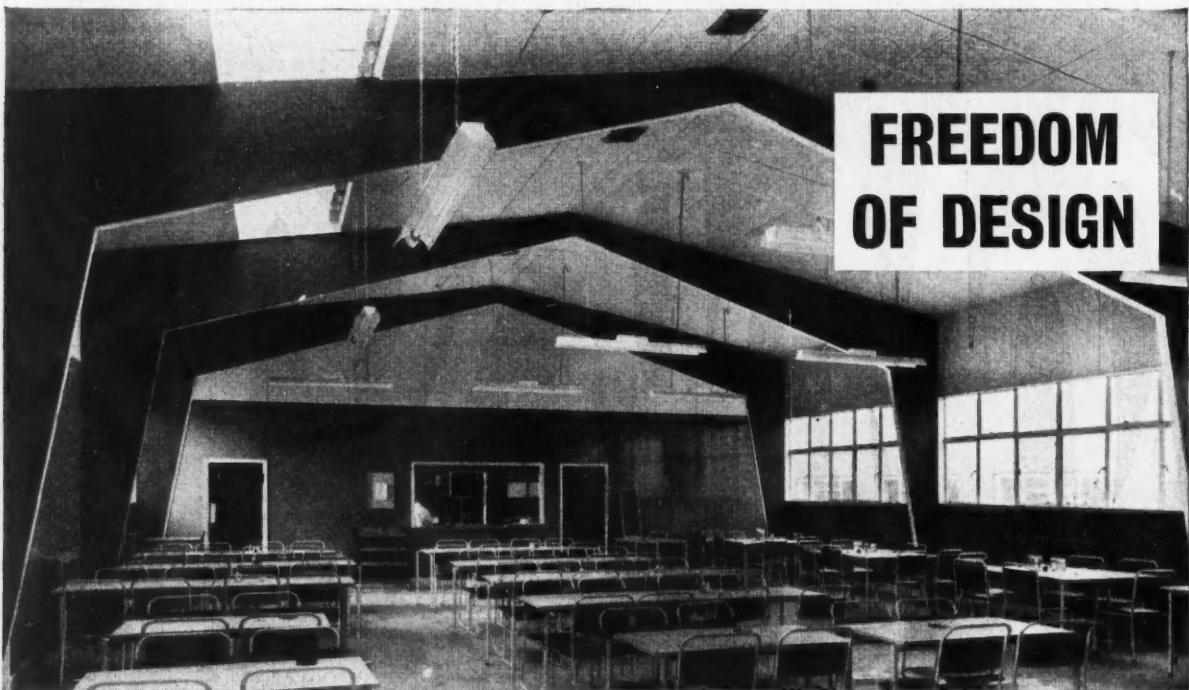


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C. F. Armstrong, M.I.C.E.

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This book is for engineers and agriculturists working on the preparation of water balance sheets and in the planning of new water resources, particularly in undeveloped territories. It provides relatively simple methods for estimating the quantities and times of crop water requirements for different localities. The author has based his book on his world-wide experience in Africa, Asia, Europe and America, and it also incorporates much useful information derived from the literature on agriculture, soil science and meteorology.

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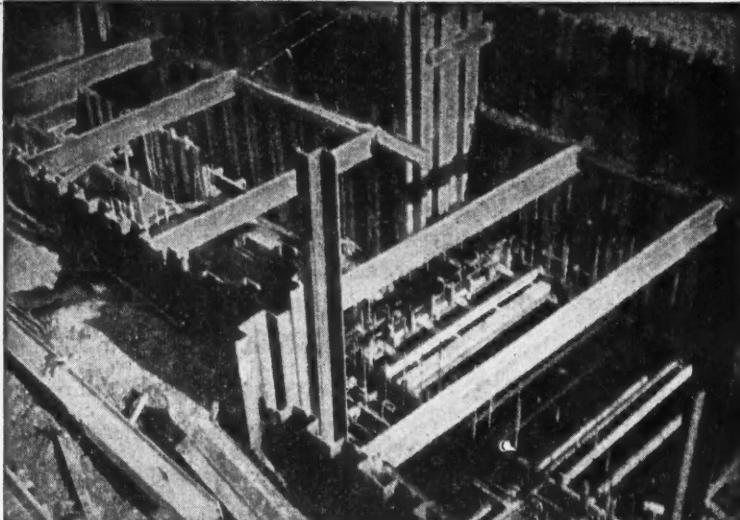
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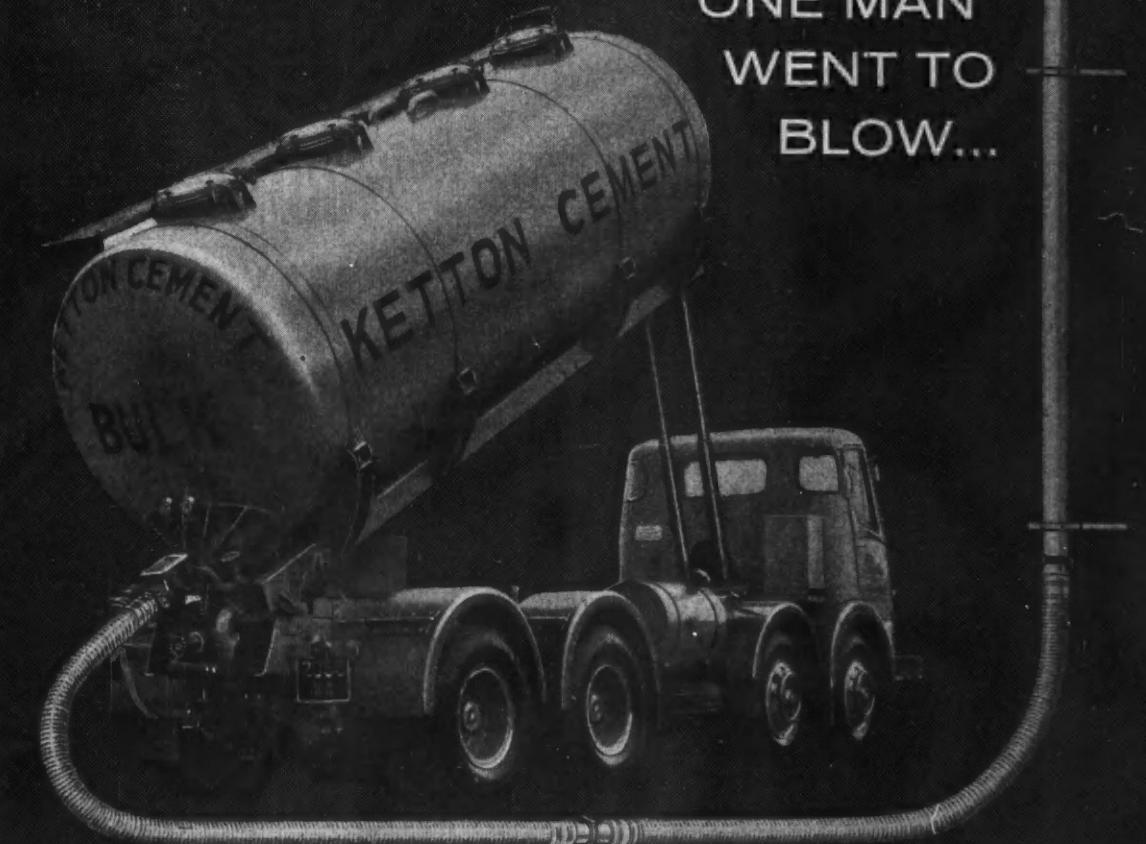
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Two 7½-ton loads are carried in the 15-ton capacity dual compartment 529 cu. ft. 19' 6" x 6' aluminium alloy cylinder. This can be mounted on any suitable tipping chassis. Flexible delivery hose is carried in light alloy boxes mounted on near side of chassis. The driver controls independent twinload discharge from the rear of the Pneumajector. Each load is gravity fed to a mixing chamber, where it meets the compressed air stream leading to the discharge manifold. During unloading the cylinder is progressively tipped to empty it completely. Discharge rate varies according to material and distance to storage point.

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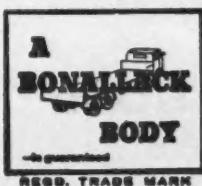
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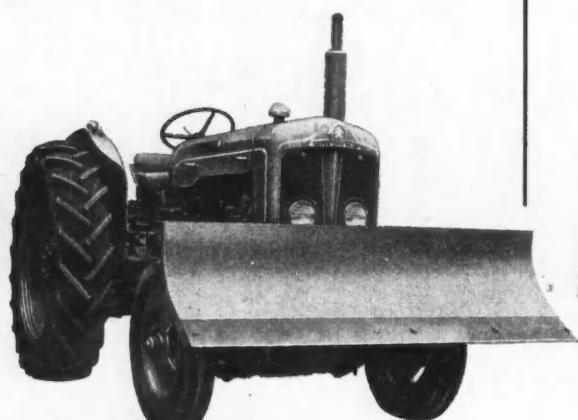
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CONTRACTS

ROYAL COUNTY OF BERKSHIRE.
HIGHWAYS ACT, 1959, PART 9.—CODE OF 1892.

TENDERS are invited for MAKING-UP GORDON ROAD and ELMHURST ROAD, Thatcham.

The work involved in the Contract will be as follows: 3,100 sq. yd. of Hardcore; 3,100 sq. yd. of Bitumen Macadam; 1,400 lin. yd. of Kerbing; 2,500 sq. yd. of Bitumen Macadam and Cold Asphalt Footways; Highway Drainage and incidental works.

Drawings may be obtained at and Specifications, Bills of Quantities and Form of Tender obtained from the Office of the COUNTY SURVEYOR, Shire Hall, Reading, on payment of a deposit of £2 (Two Pounds) which will be refunded on receipt of a bona-fide Tender.

Tenders, in envelope provided, endorsed "Gordon Road and Elmhurst Road, Thatcham," must be returned not later than Noon on MONDAY, 18th September, 1961.

The Council does not bind itself to accept the lowest or any Tender.

C O U N T Y B O R O U G H O F D E R B Y .
SEWAGE DISPOSAL WORKS.

C O N T R A C T N O . 1 1 .

TENDERS are invited for the CONSTRUCTION of TWO 45ft. dia. REINFORCED CONCRETE SLUDGE THICKENING TANKS and TWO 200ft. x 100ft. x 15ft. DEARME BANKS CONCRETE LINED SECONDARY DUSTITION LAGGINGS, together with ancillary Pipework and incidental Readworks.

General Conditions of Contract, Specification and Bills of Quantities may be obtained from the Council's Consulting Engineers, MESSRS. J. D. AND D. M. WATSON, MM.I.C.E., 6 Tufton Street, Westminster, S.W.1, on payment of a deposit of £10, which will be refunded only to contractors who submit a bona-fide Tender and return all drawings and documents. Deposit cheques should be made payable to Derby Corporation.

Tenders, in plain sealed envelope endorsed "Tender for Contract No. 11," should be submitted in a plain envelope to reach the undersigned not later than Noon on MONDAY, 2nd October, 1961.

N. S. FISHER,
Town Clerk.B O R O U G H O F H E S T O N & I S L E W O R T H .
WHITTON DENE/HALL ROAD.
HOUSING DEVELOPMENT.

TENDERS are invited for the ERECTION of 36 FLATS, 32 HOUSES and 68 GARAGES.

Firms wishing to tender should make application to the Building Surveyor, 38 Lampton Road, Hounslow, with a deposit of £2 2s. (Two Guineas), which will be refunded on receipt of a bona-fide Tender not subsequently withdrawn.

The Form of Tender and Bills of Quantities will be forwarded on or about 6th September, 1961.

Tenders must be sealed in the envelopes to be provided, and received by the undersigned not later than Noon on 27th SEPTEMBER, 1961.

D. MATHIESON,
Town Clerk.Town Hall,
Hounslow, Middx.

B O R O U G H O F H O R N S E Y .

TENDERS are invited for the ERECTION of a PUBLIC MORTUARY in MYDDELTON ROAD, N.8. Applications to receive Tender documents should be addressed to the Building Surveyor, Town Hall, The Broadway, Crouch End, London, N.8. not later than FRIDAY, 15th September, 1961.

Tenders to be received not later than Noon on MONDAY, 16th October, 1961.

W. B. MURGATROYD,
Town Clerk.

E G H A M U R B A N D I S T R I C T C O U N C I L .

PRIVATE STREET WORKS.

WEIR PLACE—CHERTSEY LANE.

TENDERS are invited for the CONSTRUCTION of a LEAN-MIX CONCRETE CARRIAGeway (970 sq. yd.), SUPERFACED CANTERBURY (500 sq. yd.) and FORMATION of SOAKAWAYS, and ancillary Works.

Copies of the Specification, Bills of Quantities and Form of Tender may be obtained from the offices of the Engineer and Surveyor, Fire Station Buildings, High St., Chertsey, Surrey, RH1 1-5, where Drawings may be inspected during office hours.

Sealed Tenders, endorsed "Weir Place," must be delivered to the undersigned not later than 12 Noon on MONDAY, 2nd October, 1961, and any Tender received after the prescribed time will not be considered.

Tenders must be submitted in the envelope provided, and no name or mark indicating the sender must appear on the envelope.

The Council does not bind itself to accept the lowest or any Tender.

A. E. VILLARS,
Clerk-Designate of the Council.Council Offices,
155 High Street,
Epsom,
Surrey.
28th August, 1961.B A S I L D O N D E V E L O P M E N T
C O R P O R A T I O N .

C H I E F E N G I N E E R ' S D E P A R T M E N T .

R O A D 4 — P H A S E I I .

C O N T R A C T E 1 5 3 .

The Corporation invites TENDERS for the CONSTRUCTION of approx. 1,300yd. of 33ft. wide CARRIAGeway, comprising 24,000 sq. yd. of 8in. and 9in. Reinforced Concrete Carrigeway, together with Footways, Surface Water Drainage, and ancillary works.

Plans may be seen, and Bills of Quantities, Specification and Form of Tender obtained, on application to the Chief Engineer, Basildon Development Corporation, Gifford House, Basildon, Essex, on payment of £5 5s. which will be returned on receipt of a bona-fide Tender, on the form provided, together with a priced Bill of Quantities fully completed. The deposit will not be returned if the Tender is subsequently withdrawn.

Tenders, enclosed in the official envelope provided, must reach the undersigned not later than Noon on THURSDAY, 21st September, 1961.

The Corporation does not bind itself to accept the lowest or any Tender.

R. C. C. BONIFACE,
General Manager.

CONTRACTS

THE BOROUGH OF PORT TALBOT.
RIVER NEATH ABSTRACTION SCHEME.

C O N T R A C T N O . 2 .

TREATMENT WORKS AND RIVER INTAKES.

TENDERS are invited from experienced civil engineering contractors for the CONSTRUCTION of the ABOVE WORKS, comprising a River Intake and Pump Pump, Reinforced Concrete Sedimentation Tanks and Filter, for 2½, 3, 4, 5, 6, Prestressed Concrete-framed Control House, a 27,000-gallon Steel Tank, Wash-water Tank, an Access Road and Bridge, together with ancillary Pipelines and Drainage Works.

Copies of the Contract documents and Drawings can be obtained from the Consulting Engineers, MESSRS. J. MINNIE, DE CON AND CO. LTD., Artillery House, Artillery Row, Westminster, S.W.1, upon payment of a cheque for £10 made payable to the Port Talbot Borough Council, refundable on receipt of a bona-fide Tender.

Tenders, in plain sealed envelopes endorsed "Tender for Treatment Works and River Intakes," should reach my Office by Noon on MONDAY, 2nd October, 1961.

The Council does not undertake to accept the lowest or any Tender, and will not defray any expenses in connection with tendering, but tenderers must make themselves fully acquainted with the site and conditions of work.

W. KING DAVIES,
Municipal Buildings,
Aberavon,
Port Talbot,
South Wales.THE BOROUGH OF PORT TALBOT.
RIVER NEATH ABSTRACTION SCHEME.

C O N T R A C T N O . 1 .

PIPELAYING.

TENDERS are invited from experienced civil engineering contractors for the SUPPLY of ALL MATERIALS and CONSTRUCTION of PIPELINE WORKS on the ABOVE WATER SCHEME.

The works consist of approximately 2½ miles of 18in. dia. Spun-Iron Pipe with Tyton Fittings, and 3½ miles of 15in. dia. Spun-Iron Pipe with Tyton Joints, together with Valves and Fittings.

Copies of the Contract documents and Drawings can be obtained from the Consulting Engineers, MESSRS. J. MINNIE, DE CON AND CO. LTD., Artillery House, Artillery Row, Westminster, S.W.1, upon payment of a cheque for £10 made payable to the Port Talbot Borough Council, refundable on receipt of a bona-fide Tender.

Tenders, in plain sealed envelopes endorsed "Tender for Pipelaying," should reach my Office by Noon on MONDAY, 2nd October, 1961.

The Council does not undertake to accept the lowest or any Tender, and will not defray any expenses in connection with tendering, but tenderers must make themselves fully acquainted with the site and conditions of work.

W. KING DAVIES,
Municipal Buildings,
Aberavon,
Port Talbot,
South Wales.B O R O U G H O F T O R Q U A Y .
MAIN DRAINAGE.

TENDERS are invited from experienced contractors for the CONSTRUCTION of the FOLLOWING MAIN DRAINAGE WORKS which are situated in the built-up area of the town:

CONTRACT "A"—Approx. 816 lin. yd. of 21in. dia. P.C.C. Pipes in St. Marychurch Road, between Castle Circus and Cedar Court Road.

CONTRACT "B"—Approx. 674 lin. yd. of 18in. dia. P.C.C. Pipes in St. Marychurch Road and Manor Road between Westhill Avenue and St. Marychurch.

The work includes all Excavations, Construction of Manholes, various Connections, Backfilling and Reinstatement.

Tenders must tender for Contract "A" and Contract "B," but the Corporation reserve the right to accept a Tender in respect of Contract "A" or "B" only.

Written notice of desire to tender should be made to the Borough Engineer, Town Hall, Torquay, accompanied by a cheque for £5 5s. made payable to the Corporation, to be returned on receipt of a bona-fide Tender.

Tenders, which must be submitted in the manner indicated in the Contract documents, must be delivered to the Town Clerk not later than Noon on MONDAY, 2nd October, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

T. ELVED WILLIAMS,
Town Hall,
Torquay.C H I S L E H U R S T A N D S I D C U P
U R B A N D I S T R I C T C O U N C I L .

STREET LIGHTING—TRUNK ROAD, A.20.

Contractors desirous of TENDERING for either, or both, of the FOLLOWING SCHEMES are invited to submit their names and addresses to the Surveyor, Manor House, Sidcup, Kent, Two Guineas deposit for each Scheme, by 25th SEPTEMBER, 1961:

- (a) Supply and Erection of 113 200-W Sodium Lamps, mounted on 35ft. Steel Columns;
- (b) Supply and Laying of 4,800yd. of Cable, and the Jointing Works to 45 Street Lamps.

T. W. FAGG,
Clerk of the Council.
Sidcup Place,
Sidcup, Kent.N O R T H W E S T M E T R O P O L I T A N
R E G I O N A L H O S P I T A L B O A R D .E X T E N S I O N O F L U T O N M A T E R N I T Y H O S P I T A L ,
L U T O N , B E D S .

Building contractors wishing to TENDER for the ABOVE WORK are invited to submit their names for inclusion on a selected list of tenderers.

The Work consists of a Substantial Single-storey Extension to Existing Hospital, the estimated cost of which is approximately £100,000.

It is anticipated that Invitations to Tender will be issued in September, 1961, and that work will commence in November, 1961.

Applications, together with details of works carried out and their value, should reach the REGIONAL ARCHITECT, North West Metropolitan Regional Hospital Board, 40 Eastbourne Terrace, London, W.2, not later than FRIDAY, 22nd September, 1961.

R. C. C. BONIFACE,
General Manager.

CONTRACTS

D U R H A M C O U N T Y C O U N C I L .
A G E N T A U T H O R I T Y F O R M I N I S T R Y O F T R A N S P O R T .DARLINGTON BY-PASS MOTORWAY—
ADVANCE CONSTRUCTION OF CERTAIN BRIDGES.

FIXED-PRICE TENDERS are invited for the CONSTRUCTION of the FOLLOWING:

- (1) Bridge over River Tees.—Three spans totalling 250ft. approx. between abutments.
- Prestressed Concrete Beam and Slab Deck, R.C. Piers and Stone-faced Abutments and Wingwalls on Plain Foundations.

- (2) Bridge over Darlington-Barnard Castle Branch Railway.—Single span 30ft. approx. Prestressed Concrete Deck, R.C. Abutments and Stone-faced Wingwalls.

Time fixed for completion of contract is 18 months. Contract documents may be obtained from the County Surveyor, Aykley Heads, Durham, on payment of a deposit of £25, to be returned on receipt of a bona-fide Tender which is not subsequently withdrawn.

Tenders, in plain sealed envelopes, should be submitted by appointment at the County Surveyor's Offices, and tenderers may obtain copies thereof on payment of £10, to be refunded on return of the Drawings in good condition.

Tenders from suitably experienced contractors only will be considered, and tenderers may be required to furnish evidence of their experience and ability in the execution of such works. The Council do not bind themselves to accept the lowest or any Tender.

Tenders, in plain sealed envelopes, endorsed "Tender for Darlington By-pass Bridges," to be delivered to the undersigned not later than Noon on WEDNESDAY, 4th October, 1961.

J. T. BROCKBANK,
Clerk of the County Council.
Shire Hall,
Durham.
23rd August, 1961.

C O U N T Y B O R O U G H O F S O U T H A M P T O N .

Southampton C.B.C. invites TENDERS for the FOLLOWING CONTRACT on Bills of Quantities now available:

CONTRACT B.361.—Erection of a Three-storey Block of Traditional Flats, Type S.2/R, containing six flats, at 444 Winchester Road, Southampton.

Applications for tender documents should be received by the BOROUGH ENGINEER, Civic Centre, Southampton, not later than 10 a.m. on MONDAY, 11th September, 1961.

B O R O U G H O F B A R K I N G .

S U R F A C I N G O F T H E E A S T H A M A N D B A R K I N G
B Y - P A S S (A . 1 3) O N T H E W E S T E R N A P P R O A C H
T O T H E R A I L W A Y B R I D G E .

TENDERS, returnable by 9 a.m., MONDAY, 25th September, 1961, are invited for the REGULATING of LEVELS and RESURFACING with 2in. of HOT ROLLING ASPHALT approx. 1,650 sq. yd. of the ABOVE.

Specification, Bill of Quantities and Form of Tender can be obtained on application to the Borough Engineer and Surveyor, Town Hall, Barking, Essex.

E. R. FARR,
Town Clerk.
Town Hall,
Barking.

C A R L T O N U R B A N D I S T R I C T C O U N C I L .

H I G H W A Y S A C T , 1 9 5 9 (P A R T I X) .

P R O P O S E D M A K I N G - U P O F D A R L E Y A V E N U E ,
C A R L T O N .

TENDERS are invited for the CONSTRUCTION of CARRIAGeways, FOOTPATHS, and incidental Works in DARLEY AVENUE, Carlton.

Specifications, Bills of Quantities and Forms of Tender may be obtained from the Engineer and Surveyor, E. C. KIRK, ESQ., A.M.I.C.E., F.R.I.C.S., M.I.Mun.E., where Drawings and General Conditions of Contract may be inspected during normal office hours.

Deposit of £2, returnable on receipt of bona-fide Tender not subsequently withdrawn.

Tenders, in a plain sealed envelope endorsed "Private Street Works," to reach the undersigned not later than 10 a.m., TUESDAY, 19th September, 1961.

The Council does not bind itself to accept the lowest or any Tender.

A. E. F. WALKER,
Clerk of the Council.
Council House,
Burton Road,
Carlton
Nottingham.
25th August, 1961.C A L N E A N D C H I P P E N H A M
R U R A L D I S T R I C T C O U N C I L .

D E R R Y H I L L S E W E R A G E .

TENDERS are invited for LAYING approx. 7,600yd. of 6in. SEWERS with Incidental works, at DERRY Hill near Chippenham.

Copies of the Contract documents can be obtained from the Engineer to the Council, at the address below, against a deposit of Two Guineas, refundable on receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, sealed in the envelopes provided, are to be delivered to the undersigned by Noon, 7th OCTOBER, 1961.

The Council does not bind itself to accept the lowest or any Tender.

H. F. HALES,
Clerk of the Council.
Blewby House,
Marshfield Road,
Chippenham.M A R K E T H A R B O R O U G H R U R A L
D I S T R I C T C O U N C I L .

K I B W O R T H S E W E R A G E .

TENDERS are invited from experienced contractors for the LAYING of approximately 300yd. of 12in. diameter CONCRETE SEWERS, together with the CONSTRUCTION of MANHOLES, and ancillary Works.

Specification, Bill of Quantities and Plan may be obtained from the Consulting Engineers, MR. J. S. PICK, EVERARD REED, AND GIMSON, 8 Millstone Lane, Luton, on payment of a deposit of £3 3s., which will be returned on receipt of a bona-fide Tender.

Tenders, on the loose form and in the envelope provided, should be delivered to the undersigned not later than 10 o'clock on the Forenoon of FRIDAY, the 29th September, 1961.

The Council does not bind themselves to accept the lowest or any Tender.

T. R. SMITH,
Clerk of the Council.
Council Offices,
42 High Street,
Market Harborough,
Leicestershire.

CONTRACTS

BUCKS. COUNTY COUNCIL.

LONDON-FISHGUARD TRUNK ROAD, A.40.
A.40/A.412 JUNCTION AND ROAD IMPROVEMENT,
DENHAM.

TENDERS are invited for ROADWORKS (approximate 600yds.) comprising Widening, Channelling in Concrete, Kerbing, Provision of Dual Carriageway with Concrete Reservation, Reconstruction of Junction, Asphalt Surfacing, Drainage and ancillary Work. Drawings may be seen at the offices of the County Surveyor, Corporation Park Street, Aylesbury, and Contract documents may be obtained from the County Surveyor on deposit of £2, returnable on receipt of a bona-fide Tender.

Tenders must reach the undersigned by 10 a.m. on MONDAY, 25th September, 1961.
R. E. MILLARD,
Clerk of the Council.

County Hall,
Aylesbury,
August, 1961.

COUNTY BOROUGH OF DUDLEY.

RUSSELLS HALL ESTATE.

CONTRACT NO. 5.

ERCTION OF 272 DWELLINGS.

APPLICATIONS are invited from building contractors having the necessary plant, personnel and organisation, to be included in a list of contractors from whom TENDERS will be invited for the ERCTION OF 272 DWELLINGS, IN PAIRS OF HOUSES and BLOCKS of TWO-STORY FLATS, all in Traditional Construction. Applications to Tenders must be submitted to the Borough Architect, 5 Ednam Road, Dudley, Warks, not later than FRIDAY, 15th September, 1961, and must be accompanied by a deposit of £2 2s., returnable upon receipt of a bona-fide Tender. Cheques to be made payable to "Dudley Corporation." Tenders documents will be sent out as soon as possible after the above date, at which time a date for receipt of Tenders will be indicated.

P. D. WADSWORTH,
Town Clerk.

The Council House,
Dudley,
Worcs.
24th August, 1961.

COUNTY BOROUGH OF BIRKENHEAD.

MUNICIPAL TRANSPORT DEPARTMENT.

SUPPLY OF UNIFORM CLOTHING.

TENDERS are invited for the SUPPLY of UNIFORM CLOTHING for 1962 for both Transport and Ferries Sections of this Department.

Tender Forms may be obtained from the General Manager, Lord Street, Birkenhead. The closing date for Tenders being 30th SEPTEMBER, 1961.
DONALD P. HEATH,
Town Clerk.

BOROUGH OF MIDDLETON.

FOOTPATH RECONSTRUCTION WORK—
ASPHALT SAND CARPET.

TENDERS are invited for the ABOVE WORKS, consisting of the Laying of approx. 1,050 lin. yd. of Precast Concrete Kerb and 2,150 sq. yd. Asphalt (Sand Carpet).

Copies of the Conditions of Contract, Specification, Bill of Quantities and Form of Tender may be obtained on application to the Borough Engineer and Surveyor, Town Hall, Middleton, near Manchester, and should be despatched and returned in plain sealed envelopes endorsed "Footpath Reconstruction Works," to the undersigned not later than 12 Noon on WEDNESDAY, 13th September, 1961.

The Council does not bind itself to accept the lowest or any Tender.

F. JOHNSTON,
Town Clerk.

Town Hall,
Middleton,
Near Manchester.
22nd August, 1961.

BRIXWORTH RURAL DISTRICT COUNCIL.

COTTESBROOK AND CREATOR SEWERAGE AND SEWAGE DISPOSAL.

TENDERS are invited from suitably experienced contractors for the LAYING of approximately 6,200yds. of 12in., 9in., and 6in. diameter CAST-IRON, CONCRETE and SALT GLAZED WARE SEWERS, together with Manholes and House Connections, the CONSTRUCTION of a SWAGE DISPOSAL WORKS comprising Screening and Storm Overflow Chambers, Settling Tank, Two 38ft. diameter Filters, Humus Tank, Sludge Drying Beds, Sludge Pumping Station and Attendant Pipework, Paths and Roads, etc., at Cottesbrook and Creator, Northamptonshire. Period of Contract 18 months.

Key Plans, together with Specification and Bill of Quantities in duplicate, may be obtained from the Council's Consulting Engineers, MESSRS. PICK, EVERARD, KEAY AND GIMSON, 6 Millstone Lane, Leicestershire, on payment of a deposit of One Guinea, made payable to the Brixworth Rural District Council, which will be refunded on receipt of a bona-fide Tender. Further detailed Drawings are available for inspection at the same offices.

Tenders on the form supplied, accompanied by a Priced Bill of Quantities, are to be sent in the envelope provided to the undersigned not later than 12 Noon on FRIDAY, 6th October, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

P. E. J. STEWART,
Clerk of the Council.

Council Offices,
Brixworth,
Northants.

USK RIVER BOARD.

RECONSTRUCTION OF PONTAFEN ARCH.

TENDERS are invited for the CONSTRUCTION of a REINFORCED CONCRETE BOX CULVERT under NASH ROAD, Newport, Mon.

Plans, Specification and Form of Tender may be obtained from the undersigned on the payment of a deposit of £1, which will be returned on receipt of a bona-fide Tender.

Tenders are to be enclosed in a plain sealed envelope endorsed "Tender Pontafen Arch," and are to be received by the Clerk to the Board not later than the 14th SEPTEMBER, 1961.

The Board do not bind themselves to accept the lowest or any Tender.

G. MCLEOD, M.I.C.E.,
Engineer.

The Croft,
Goldcroft Common,
Caerleon, Mon.
24th August, 1961.

CONTRACTS

COUNTY BOROUGH OF SOUTHAMPTON.

TENDERS are invited for the SUPPLY of the FOLLOWING VEHICLES:—
Two Ford 4D 3-ton Lorries.
One 7cwt. Thames Van.

Technical Terms and Specifications, obtainable from the BOROUGH ENGINEER AND SURVEYOR, Civic Centre, Southampton, must be returned by Noon, 29th SEPTEMBER, 1961.

COUNTY BOROUGH OF MIDDLESBROUGH.

EASTERSIDE—126 DWELLINGS AND 43 GARAGES.

TENDERS are invited for the ERECTION of the ABOVE DWELLINGS and GARAGES, to be let as One Contract.

Bills of Quantities from Borough Engineer, deposit Two Guineas. Tenders to be received by TOWN CLERK on or before MONDAY, 9th October, 1961.

BOROUGH OF EALING.

TENDERS are invited for the CONSTRUCTION of a COVERED WAY, LAVATORIES and PRINTING ROOMS, situated in the TOWN HALL, UXBRIDGE ROAD, Ealing, W.S.

Details from Borough Engineer, Town Hall, Ealing, W.S., on payment of £2, returnable on receipt of bona-fide Tender.

Closing date of Tender, 22nd SEPTEMBER, 1961.

E. J. COPE-BROWN,
Town Clerk.

BOROUGH OF WIDNES.

CONTRACT NO. 409.

HALTON VIEW HOUSING SITE.

ADVANCE PREPARATION—ROADS AND SEWERS.

TENDERS are invited for the LAYING of approximately 220 lin. yd. of 9in. and 6in. diameter S.G.W. SEWERS and the CONSTRUCTION of approximately 1,500 sq. yd. of LEAN-MIX CONCRETE BASE to CARRIAGeways.

Copies of Specification, Bill of Quantities and Form of Tender may be obtained from the Borough Engineer, Town Hall, Widnes, on payment of a deposit of £2 2s., refunded on receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, in the envelope provided endorsed "Halton View Housing Site," to reach the Borough Engineer, not later than 12 Noon on 21st SEPTEMBER, 1961.

FRANK HOWARTH,
Town Clerk.

TOWN HALL,

Widnes.

BOROUGH OF WIDNES.

CONTRACT NO. 407.

HALE ROAD HOUSING SITE.

ADVANCE PREPARATION—ROADS AND SEWERS.

TENDERS are invited for the FOLLOWING:—

(i) The Laying of approximately 320 lin. yd. of 30in. diameter Concrete Sewer, mostly in Hale Road, Widnes, duplicating an existing 30in. diameter Sewer.

(ii) The Laying of approximately 35 lin. yd. of 15in. diameter S.G.W. Sewer, 190 lin. yd. of 12in. diameter S.G.W. Sewer, and 417 lin. yd. of 12in. diameter S.G.W. Sewer, all on Site.

(iii) The Construction of approximately 4,775 sq. yd. of Lean-mix Concrete Base to Carrigeways.

Copies of Specification, Bill of Quantities and Form of Tender may be obtained from the Borough Engineer, Town Hall, Widnes, on payment of a deposit of £2 2s., refunded on receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, in the envelope provided endorsed "Hale Road Housing Site," to reach the Borough Engineer, not later than 12 Noon on 21st SEPTEMBER, 1961.

FRANK HOWARTH,
Town Clerk.

TOWN HALL,

Widnes.

CHELMSFORD RURAL DISTRICT COUNCIL.

INVITATION TO TENDER FOR WATER MAIN RENEWALS.

WAVERLEY CRESCENT AND LINDON ROAD, RUNWELL.

TENDERS are invited for the PROVISION, LAYING and JOINTING of approximately 900 lin. yd. of 6in. diameter ASBESTOS CEMENT PRESSURE PIPES at WAVERLEY CRESCENT and LINDON ROAD, Runwell.

Drawings, Form of Tender Specification and Bills of Quantities may be obtained from the Council's Engineer and Surveyor at the undermentioned address, on payment of a deposit of One Guinea, which will be refundable on receipt of a bona-fide Tender.

Tenders are invited on a fixed-price basis, and a cost variation clause for labour and materials will be included in the Contract.

Tenders to be delivered to the undersigned in a plain sealed envelope, duly endorsed, by not later than MONDAY, 18th September, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

C. A. BOHANNON,
Clerk of the Council.

Rural District Council Offices

New London Road,
Chelmsford,
Essex.

CHAILEY RURAL DISTRICT COUNCIL.

MAIN DRAINAGE OF PIDDINGHOE.

C1/8 CONTRACT NO. 1.

TENDERS are invited for the LAYING of approximately 2,600 lin. yd. of small diameter SEWERS and RISING MAINS, CONSTRUCTION of TWO PUMPING STATIONS, and ancillary Work.

Particulars and Specifications may be obtained, and Plans Inspected, from the Offices of the Consulting Engineers, MESSRS. HOWARD HUMPHREYS & SONS, West Street, Epsom, Surrey, on payment of £1, between 10 a.m. and 4 p.m., upon payment of a deposit of £3 3s., by cheque made payable to the Council, returnable to each contractor submitting a bona-fide Tender not subsequently withdrawn.

Prints of the Contract Drawings can be obtained on loan from the Consulting Engineers on payment to them of £1 by cheque made payable to HOWARD HUMPHREYS (SERVICES). All prints returnable.

Tenders on the form supplied, accompanied by a deposit of Five Guineas, will be returned on payment of a bona-fide Tender and tender documents.

Tenders are to be enclosed in a plain sealed packet, marked "Millbrook, Castle Cary," and must reach the undersigned not later than the 10th OCTOBER, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

CONTRACTS

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE.

TENDERS are invited for the FOLLOWING WORKS:

(1) The Construction of a new West Riding Classroom Unit at Malby Crags Junior School, Breckin, up Foundations and Reinforcing, Playground, the Re-erection of the Structure at Spofforth C.E. School, including the forming of a new base, together with ancillary works.

(2) Fencing Works to the School Boundary at Dearne Thurnscoe the Hill Secondary and J.M.I. School.

Plans and Specifications for Contract No. (1) are available on application to the Divisional Architect, Saltaire Buildings, Albert Street, Harrogate, and for Contract No. (2) to the Divisional Architect, Planet Road, Adwick-le-Street, Doncaster.

Sealed Tenders must be addressed to me, the undersigned, and received at Room 3, County Hall, Wakefield, not later than 9 a.m. on TUESDAY, 3rd October, 1961.

BERNARD KENYON,
Clerk of the County Council.

BOROUGH OF HEMEL HEMPSTEAD.

HIGHFIELD—SCHEME 7.

TENDERS are invited for the ERECTION of ONE FOUR-STOREY BLOCK, comprising 10 Shops, 10 Missionaries and 2 flats, together with 22 Garages, Access Roads and ancillary Works.

Tender documents will be available from 7th September, 1961, and persons desiring to submit Tenders should apply at once to A. H. TURNER, A.M.I.C.E., Borough Engineer, High Street, Hemel Hempstead, at whose office the Drawings and Conditions of Contract may be inspected during normal office hours.

Tenders, in the envelopes provided, must be delivered to me not later than First Post on THURSDAY, 5th October, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender, and acceptance of a Tender will be subject to its approval by the Ministry of Housing and Local Government.

C. W. G. T. KIRK,
Town Clerk.

Town Hall,
High Street,
Hemel Hempstead.
29th August, 1961.

BOROUGH OF EPSOM AND EWELL.

WIDENING OF COLLEGE ROAD AND IMPROVEMENTS TO BURGH HEATH ROAD.

The Corporation invite TENDERS from experienced public works contractors for the ABOVE WORKS, which include Kerbing, Construction of Lean Dry Concrete Haunch, Laying of Macadam and Footpath Works.

Copies of the Conditions of Contract, Specification, Bill of Quantities, Drawings, Conditions and Form of Tender may be obtained from the office of MR. COLIN COBBETT, M.I.C.E., M.I.M.U.E., Borough Engineer and Surveyor, Town Hall, Epsom, during working hours, upon payment of a deposit of £2 2s. Deposits will be retained until a contractor has submitted a bona-fide Tender not subsequently withdrawn.

Tenders must be delivered to me at the address mentioned below not later than Noon on FRIDAY, 22nd September, 1961, and no Tender will be received and considered unless it is enclosed in a plain sealed envelope, dated, addressed to "College Road and Burgh Heath Road." This envelope must not bear any mark or name indicating the sender.

The Corporation do not bind themselves to accept the lowest or any Tender.

EDWARD MOORE,
Town Clerk.

Town Hall,
The Parade,
Epsom,
Surrey.

August, 1961.

BOROUGH OF ELLESMEDE PORT.

ADDITIONAL MESS ROOM, OFFICE AND TOILET FACILITIES — WHITBY HALL, ELLESMEDE PORT.

TENDERS are invited for CONSTRUCTING additional MESS ROOM, OFFICE and TOILET FACILITIES at WHITBY HALL, Ellesmeade Port.

Documents obtainable from the Borough Architect and Housing Director, Queen Street, Ellesmeade Port, on the 8th SEPTEMBER, 1961.

Sealed Tenders in the plain official envelope provided, must reach me by post by not later than 5 p.m. on MONDAY, the 25th September, 1961. The Council do not bind themselves to accept the lowest or any Tender.

R. J. BERNIE,
Town Clerk.

Municipal Offices,
Ellesmeade Port.

CITY OF BATH.

LADY HUNTINGDON'S DISUSED BURIAL GROUND, JULIAN ROAD, BATH.

TENDERS are invited for the REMOVAL of HUMAN REMAINS from the LADY HUNTINGDON'S BURIAL GROUND, JULIAN ROAD, Bath, covering an area of approximately 1,200 square yds.

The Specification, Bill of Quantities, General Conditions and Form of Tender may be obtained from the City and Waterworks Engineer, Guildhall, Bath, on payment of a deposit of £2 2s. Deposits will be refunded on receipt of a bona-fide Tender.

Tenders must be delivered in the envelopes provided to the Town Clerk not later than Noon on WEDNESDAY, 20th September, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

JARED E. DIXON,
Town Clerk.

Guildhall,
Bath.

WINCANTON RURAL DISTRICT COUNCIL.

The Council invite TENDERS for the ERECTION of OLD PEOPLE'S ACCOMMODATION at MILLBROOK, CASTLE CARY, comprising 19 Bungalows and Ward's old Community Block, together with Site Works and ancillary works.

Specification, Bill of Quantities, Drawings and Form of Tender may be obtained from the Council's Engineer and Surveyor, Council Offices, Wincanton, on payment of a deposit of Five Guineas, which will be returned on receipt of a bona-fide Tender and tender documents.

Tenders are to be enclosed in a plain sealed packet, marked "Millbrook, Castle Cary," and must reach the undersigned not later than the 10th OCTOBER, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

S. L. CHAVE,
Clerk of the Council.

Council Offices,
Wincanton,
Somerset.

6th September, 1961.

CONTRACTS

BOROUGH OF STOURBRIDGE.
WITTON STREET AND GLEBE LANE
STORM WATER SEWER.

TENDERS are invited for the CONSTRUCTION of the ABOVE WORKS, which consist of approximately 418 lin. yd. of 12in. dia. Silt Glazed Stoneware Pipes, together with Brick Manholes and incidental Works. Bills of Quantities, Specification and Contract Documents may be obtained from, and Plans and Drawings may be inspected at, the office of the Undersecretary on receipt of a deposit of Two Guineas, which will be returned on receipt of a Tender not subsequently withdrawn and the return of all documents.

Tenders, by recorded delivery in plain sealed envelopes, endorsed "Witton Street and Glebe Lane Sewer," must reach the Town Clerk not later than Noon, FRIDAY, 6th October, 1961.

The Council does not bind itself to accept the lowest or any Tender.

H. W. MORRIS,
B.Sc.(Eng.), M.I.Mun.E., A.M.I.C.E.,
Borough Engineer and Surveyor.

Council House,
Stourbridge.
30th August, 1961.

CITY OF ROCHESTER.
CONSTRUCTION OF RELIEF SEWERS.

TENDERS are invited for the CONSTRUCTION of approximately 500 lin. yd. of 6in. diameter 2,400 lin. yd. of 9in. diameter, 470 lin. yd. of 12in. diameter, 525 lin. yd. of 15in. diameter, and 70 lin. yd. of 21in. diameter FOUL RELIEF SEWERS, with ancillary Works, and also several small interconnections to your Sewers.

The Drawings and General Conditions of Contract may be inspected at the office of JAMES A. PEEL, Esq., A.M.I.C.E., M.I.Mun.E., City Surveyor, 66 Maldon Road, Rochester, during normal working hours. The Form and Conditions of Tender, Specification and Contract Specification and Bills of Quantities may be obtained at the above address on payment of a deposit of £2 2s., which will be refundable on receipt of a bona-fide Tender.

Tenders, in plain sealed envelope endorsed "Tender for Proposed Foul Relief Sewers," must be received by the undersigned not later than Midday on MONDAY, 2nd October, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

PHILIP H. BARTLETT,
Town Clerk.

Guildhall,
Rochester.
Kent.
29th August, 1961.

CITY OF ROCHESTER.
BROOM HILL ROAD IMPROVEMENT—
STAGE 2, PART 2.

TENDERS are invited for the WIDENING and RECONSTRUCTION of BROOM HILL ROAD (Part), comprising the Construction of a short length of 9in. diameter Surface Water Sewer, 985yd. of 6in. Reinforced Concrete Carrigeway, a Brick-faced Mass Concrete Retaining Wall 105yd. long, together with Paving, Kerbing, and Walling Works.

The Drawings and General Conditions of Contract may be inspected at the office of JAMES A. PEEL, Esq., A.M.I.C.E., M.I.Mun.E., City Surveyor, 66 Maldon Road, Rochester, during normal working hours. The Form and Conditions of Tender, Specification and Contract Specification and Bills of Quantities may be obtained at the above address on payment of a deposit of £2 2s., which will be refundable on receipt of a bona-fide Tender.

Tenders, in plain sealed envelope endorsed "Tender for Proposed Improvement, Broom Hill Road, Part 2, Stage 2," must be received by the undersigned not later than Midday on MONDAY, 2nd October, 1961.

The Corporation do not bind themselves to accept the lowest or any Tender.

PHILIP H. BARTLETT,
Town Clerk.

Guildhall,
Rochester.
Kent.
29th August, 1961.

CATERHAM AND WARLINGHAM URBAN DISTRICT COUNCIL.
RECONSTRUCTION OF COULDSON ROAD,
CATERHAM.

TENDERS are invited for the RECONSTRUCTION of COULDSON ROAD, Caterham, Involving the Renewal of 1,040 lin. yd. of Kerbing, Surfacing of 900 sq. yd. of Footpath, Reconstruction of 3,700 sq. yd. of Carrigeway Foundation, Burning off 4,000 sq. yd. of Carrigeway, and the Laying of 10,000 sq. yd. of Hot-mixed Asphalt Surfacing, together with Incidental Works.

Copies of the Bill of Quantities, Specification, Drawing and Form of Tender may be obtained on application to the Engineer and Surveyor, Council Offices, Caterham, together with a deposit of £2 2s., which is returnable on receipt of a bona-fide Tender.

Tenders, in the envelope provided, are to be delivered to the undersigned not later than Noon on FRIDAY, 22nd September, 1961.

B. J. SMERDON,
Clerk of the Council.

Council Offices,
Caterham,
Surrey.

THE URBAN DISTRICT COUNCIL OF ABERDARE.
ERCTION OF FIRE ESCAPE.

TENDERS are invited from experienced contractors for the ERECTION of a FIRE ESCAPE at 42/43 HIGH STREET, Aberdare.

Specification, Drawing and a Tender Form may be obtained from the Engineer and Surveyor, Vestry Hall, Aberdare, on payment of a deposit of £1, which will be returned on the receipt of a bona-fide Tender and all loaned documents.

Tenders, in plain sealed envelopes bearing no mark or indication of the sender, but endorsed "Fire Escape," must reach me on or before FRIDAY, 29th September, 1961.

D. G. JAMES,
Clerk of the Council.

Town Hall,
Aberdare.
30th August, 1961.

CAVEN WATER BOARD.
WATER MAIN, GRASSINGTON.

TENDERS (fixed-price) invited for SUPPLYING and LAYING approx. 248yd. of 3in. dia. CAST-IRON PIPE in the highway. Tender documents from CAVEN WATER BOARD, Belmont Bridge, Skipton, Yorkshire, by application on contractor's headed paper. Tenders required by 18th SEPTEMBER.

CONTRACTS

LONDON COUNTY COUNCIL.
GOSWELL ROAD WIDENING.

TENDERS are invited from contractors having considerable experience of large road construction works, for the WIDENING of GOSWELL ROAD, Finchley, between Barnet Street and Goswell Street.

Form of Tender, Specification, etc., and Drawings are obtainable from the Chief Engineer upon payment of £3 by crossed cheque or order made payable to the London County Council, which will be returned only if a bona-fide Tender is submitted and not subsequently withdrawn.

Contract and other relevant documents may be inspected on personal application at Room 4500, County Hall, before payment of fee. Remittance by post should be addressed to the Chief Engineer, County Hall, Westminster Bridge, S.E.1.

Tenders, received by the CLERK OF THE COUNCIL, after 3 p.m. on MONDAY, 9th October, 1961, will be considered.

The Council does not bind itself to accept the lowest or any Tender.

The Council do not bind itself to accept the lowest or any Tender.

H. N. JENNER,
County Surveyor.

The Castle,
Winchester.
25th August, 1961.

COUNTY BOROUGH OF BURNLEY.

SEWERAGE, ROAD IMPROVEMENTS AND APPURTENANT WORKS.

TOWNELEY SMALLHOLDINGS, BURNLEY.

TENDERS are invited from public works contractors for the LAYING of approximately 1,600 lin. yd. of 9in. diameter SEWER, RE-LAYING of 100lin. yd. of DRAINS, SURFACING in BITUMINOUS MACADAM of APPROXIMATELY 8,500 sq. yd. of ROADWAY, the FITTING of NEW TOILETS, to 35 DWELLINGS, and the PROVISION and CONSTRUCTION of an EJECTOR and CHAMBER.

Tender documents may be obtained from the Borough Engineer and Surveyor, 22-24 Nicholas Street, Burnley, on payment of a deposit of £3, which will be refunded on receipt of a bona-fide Tender.

Tenders are to be returned, to reach the undersigned not later than 10 a.m. on 6th OCTOBER, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

C. V. THORNLEY,
Town Clerk.

COUNTY BOROUGH OF BURNLEY.
CONSTRUCTION OF ACCESS BRIDGE TO CLIFTON RECREATION GROUND.

TENDERS are invited for the CONSTRUCTION of a LIGHT BRIDGE of 40ft. span off HOLME ROAD, Burnley. The Work comprises the Erection of Two British Universal Beams, Encased in Concrete and Reinforced Concrete Slab Decking.

Tender documents may be obtained from the Borough Engineer and Surveyor, 22-24 Nicholas Street, Burnley, on payment of a deposit of £2, which will be refunded on receipt of a bona-fide Tender.

Tenders are to be returned, to reach the undersigned not later than 10 a.m. on 26th SEPTEMBER, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

C. V. THORNLEY,
Town Clerk.

BOROUGH OF TIPTON.
NEW STREET PRIVATE STREET WORKS.

TENDERS are invited for the MAKING-UP of FOOTWAYS and CARRIGEWAYS, and ancillary Works, under the Highways Act, 1959.

Drawings and General Conditions of Contract may be seen, and Form of Tender, Specification and Bill of Quantities may be obtained from J. BUTLER, Borough Engineer and Surveyor, Municipal Buildings, Sedgley Road West, Tipton, on payment of Two Guineas, which will be refunded on receipt of a bona-fide Tender not subsequently withdrawn. Cheques to be made payable to "Tipton Corporation."

Tenders are to be returned, to reach the undersigned not later than 10 a.m. on WEDNESDAY, 11th October, 1961.

The Corporation does not bind itself to accept the lowest or any Tender.

KENNETH W. MADIN,
Town Clerk.

Municipal Buildings,
Sedgley Road West,
Tipton.

FAREHAM URBAN DISTRICT COUNCIL.

PRIVATE STREET WORKS.

TENDERS invited for MAKING-UP the PRIVATE STREET known as SEAMEAD (off Stubbington Lane), Stubbington (total length approximately 410 lin. yd.), involving the Construction of Surface Water Drainage (approximately 315 lin. yd. 9in. and 6in. diameter Sewers), Kerb and Channel, Carrigeway Strengthening and Shaping with Tarmacrete Surfacing (approximately 2,140 sq. yd.), Footways Surfaced with Tarmacadam, and other incidental Works.

Plans may be inspected, and Tender documents obtained, from the Engineer and Surveyor, Westbury Manor, West Street, Fareham, Hants, on payment of a deposit of £2, which will be refunded on receipt of a bona-fide Tender.

Tenders are to be received by me by the 21st SEPTEMBER, 1961; other documents to be returned to the Engineer and Surveyor by the same date.

The Council does not bind itself to accept the lowest or any Tender.

B. W. RANDS,
Clerk of the Council.

"Merton,"
5 Grove Road,
Fareham,
Hants.

CONTRACTS

COUNTY BOROUGH OF HASTINGS.
NEW GRAMMAR SCHOOL FOR 570 PUPILS.

TENDERS are invited for the ERECTION of the ABOVE SCHOOL with the exception of the bulk excavation, which is being carried out under a separate Contract.

Applications for Bills of Quantities and Form of Tender should be sent to the Borough Surveyor, 37 Wellington Square, Hastings, on or before Thursday, the 14th September, 1961, enclosing a deposit of £5 5s, made payable to the Hastings Corporation. The deposit will be returned after a bona-fide Tender is received.

Sealed Tenders, in an envelope to be provided, should be delivered to the undersigned not later than THURSDAY, the 26th October, 1961.

The Corporation does not bind itself to accept the lowest or any other Tender.

N. P. LESTER,
Town Clerk.

Town Hall,
Hastings.

CITY OF PORTSMOUTH.
RUDMORE ROAD STORMWATER OVERFLOW SEWER.

TENDERS are invited for the ABOVE CONTRACT. The Works include the Construction of a Stormwater Overflow Chamber and approximately 320 lin. yd. of 6in. diameter Sewer, and ancillary Works.

Tender documents may be obtained from the City Engineer, Clarence Dock, Portsmouth, on payment of a deposit of £2, which will be refunded on receipt of a bona-fide Tender and/or return of all the documents.

Tenders, enclosed in the envelope provided, must be delivered to the undersigned not later than Noon on FRIDAY, 29th September, 1961.

J. R. HASLEGRAVE,
Town Clerk.

Guildhall,
Portsmouth.

25th August, 1961.

WIRRAL URBAN DISTRICT COUNCIL.

DOWNHAM ROAD SOUTH HOUSING SITE.

CONTRACT NO. 301.

PROPOSED ROAD AND SEWER WORKS.

FIXED-PRICE TENDERS are invited for the CONSTRUCTION of ROAD and SEWER WORKS at the ABOVE SITE.

The Specification, Bills of Quantities and Form of Tender may be obtained on application to the Engineer and Surveyor, Council Offices, Heswall, at which office the Conditions of Contract and Contract Drawings may be inspected.

Tenders, in plain sealed envelopes endorsed "Proposed Road and Sewer Works, Downham Road South Housing Site," must be delivered to the undersigned not later than 10 a.m. on THURSDAY, the 14th September, 1961.

The Council does not bind itself to accept the lowest or any Tender received.

W. F. ROBERTS,
Clerk of the Council.

Council Offices,
Heswall,
Wirral,
Cheshire.

NEWPORT (SALOP) URBAN DISTRICT COUNCIL.

SEWERAGE AND SEWAGE DISPOSAL.

CONTRACT NO. 2.

Civil engineering contractors possessing the necessary experience and plant, and wishing to tender for the CONSTRUCTION of WORKS of SEWERAGE and SEWAGE DISPOSAL at Newport, Shropshire, are invited to submit their names to the undersigned by 29th SEPTEMBER, 1961.

The Work involves the Construction of some 2,300 lin. yd. of Concrete, Spun-Iron and Glazed Stoneware Pipe Sewers, varying in diameter from 21in. to 6in., with associated Appurtenances, Sewage Disposal Works, comprising Detritus Tanks and Storm Overflow Weirs, Two Sedimentation Tanks, Two Bacteria Beds, each 91ft. in diameter, Two Humus Tanks, Pumping Station, Office and Store, and the Modification of Existing Bunker to Storm Water Tank and Sludge Drying Bed, together with Incidental Works.

Applications must be accompanied by a brief list of Contracts recently completed, with special reference to those relating to sewerage and sewage disposal and to reinforced concrete construction.

Bills of Quantities and Forms of Tender will be forwarded to selected applicants in due course.

Drawings may be inspected by appointment at the offices of the Consulting Engineers, MESSRS. A. H. S. WATERS AND PARTNERS, of 25 Temple Row, Birmingham, 2.

The Council does not bind itself to accept the lowest or any Tender.

W. P. GOLDSBROUGH,

Clerk of the Council.

Council Offices,
Newport,
Salop.

30th August, 1961.

NEATH RURAL DISTRICT COUNCIL.

STREET LIGHTING ROAD, B.4434, TONNA.

TENDERS are invited for the ERECTION of 37 15ft. CONCRETE COLUMNS and 37 50-watt SODIUM LAMPS and LANTERNS, together with all auxiliary gear and wiring.

General Conditions of Contract, Specification and Bill of Quantities may be obtained from the Engineer and Surveyor, MR. J. T. JONES, F.R.I.C.S., 18 Orchard Street, Neath, on payment of £2 2s., which will be refunded on receipt of a bona-fide Tender.

Tenders, in plain sealed envelopes, named "Street Lighting for Tonna Road," must be sent to the undersigned so as to reach him not later than MONDAY, 2nd October, 1961.

I. H. K. THORNE,

Clerk of the Council.

Orchard Chambers,
Orchard Street,
Neath.

FYLDWATER BOARD.

CONTRACT NO. 142.

ROOFING OF WESTBY RESERVOIR.

TENDERS are invited from suitably experienced manufacturers for the SUPPLY and DELIVERY to Westby Reservoir site, near Kirkham, Lancashire, of CURVED ALUMINIUM TROUGHED ROOF SHEETS.

Further particulars and tender documents from the Engineer, FYLDWATER BOARD, Sefton Street, Blackpool.

Tenders must be received not later than 10th NOVEMBER, 1961.

CONTRACTS

ROYAL COUNTY OF BERKSHIRE.
RECONSTRUCTION OF HURST ROAD (PART).
TWYFORD.

TENDERS are invited for the RECONSTRUCTION of part of HURST ROAD, TWYFORD, Berkshire, a length of 908 lin. yd. The scheme provides for approx. 1,600 cu. yd. of Excavation, 450 cu. yd. of Concrete Foundation, Gravel Asphalt Surfacing, Kerbing, Footway, Surface Water Draining and Inculcations. Drawings may be inspected at and Conditions of Contract, Specification, Bill of Quantities and Form of Tender obtained from the Office of the COUNTY SURVEYOR, Shire Hall, Reading, on payment of a deposit of £2, returnable upon receipt of a bona-fide Tender.

Tenders must be returned in the envelope provided, not later than 9 a.m. on THURSDAY, 28th September, 1961.

The Council does not bind itself to accept the lowest or any Tender.

BOROUGH OF WESTON-SUPER-MARE.

OLDMIXON TOWN DEVELOPMENT SITE.

ERCTION OF FURTHER 88 DWELLINGS, ETC.

Contractors desirous of submitting TENDERS for the ERECTION of 88 TRADITIONAL TERRACED and SEMI-DETACHED DWELLINGS (all Two-storey), and 35 LOCK-UP GARAGES at the ABOVE SITE are invited to inspect the works not later than MONDAY, the 18th September, 1961, so that the Council may select contractors from whom they will invite Tenders.

R. G. LICKFOLD,
Town Clerk.

Town Hall,
Weston-super-Mare.
30th August, 1961.

BOROUGH OF ROWLEY REGIS.STORM WATER SEWER—DUDLEY ROAD EAST,
TIVIDALE, AND OUTFALL TO RIVER TAME

TENDERS are invited for the REGRADING of 600 lin. yd. of BROOKCOURSE, the CONSTRUCTION of 160 lin. yd. of 33in. to 45in. dia. STORM WATER SEWER, together with MANHOLES and ancillary works.

Form of Tender, Specification, Bills of Quantities may be obtained from, and Conditions of Contract and Plans inspected at the Office of the Borough Engineer and Surveyor, G. WOOD, M.I.C.E., Municipal Buildings, Old Hill, Staffs, on payment of a deposit of £2 2s., which will be refunded on receipt of a bona-fide Tender, not afterwards withdrawn.

Tenders must be sent to the undersigned "Storm Water Sewer—Dudley Road East, Outfall and Outfall to River Tame" so as to arrive not later than 12 Noon on MONDAY, 25th September, 1961.

G. C. COOKSON,
Town Clerk.

BOROUGH OF LUDLOW.

TO BUILDING CONTRACTORS

SWIMMING BATH—STAGE 5.

TENDERS are invited upon designs prepared by the Council's architect (Mr. SIR RUPERT AND SON, Chartered Architects, 54 Broad Street, Ludlow) and Bills of Quantities prepared by the Council's Quantity Surveyor (J. KIRKHAM DALE AND SON, Chartered Quantity Surveyors, 117 Colmore Row, Birmingham) for STAGE 5 of LUDLOW SWIMMING BATH.

The work consists of the construction of the present Open Air Swimming Pool with a Low Pitched Roof on Timber Arches and Brick, Timber and Glass Walls. Firms wishing to Tender should apply immediately to the Architect at the above address.

J. P. MOLONY,
Town Clerk.

Municipal Offices,
Dinlou,
Ludlow,
Salop.

1st September, 1961.

CITY OF MANCHESTER.

PRIVATE STREET WORKS.

TENDERS are invited for the PAVING and COMPLETING of CRESCENT RANGE, VICTORIA PARK—approx. 1,100 sq. yd. of Bitumen Macadam Carriageway, 1,000 sq. yd. of Asphalt Sand Carpet Footpaths and all ancillary works.

Tender documents (returnable by the 2nd OCTOBER, 1961) from the CITY SURVEYOR, Town Hall, Manchester, 2.

CITY AND COUNTY OF NEWCASTLE UPON TYNE.

The Children's Committee of the Corporation are prepared to receive TENDERS for the ERECTION of ONE CHILDREN'S FAMILY GROUP HOME and GARAGE at SLATYFORD LANE, Slatyford Lane Estate.

Bills of Quantities and Form of Tender may be obtained, on application, in writing, to the City Architect, 18 Cloth Market, Newcastle upon Tyne, where Plans and Conditions may be seen. Sealed Tenders must reach the City Architect not later than 10 a.m. on FRIDAY, the 29th September, 1961. No Tender will be received except in the official envelope, which must not bear any name or mark indicating the sender.

The Committee do not bind themselves to accept the lowest or any Tender.

JOHN ATKINSON,
Town Clerk.

Town Hall,
Newcastle upon Tyne, 1.

31st August, 1961.

PETERSFIELD URBAN DISTRICT COUNCIL.SEVEN HOUSES, SITE 2, BOROUGH ROAD,
PETERSFIELD.

TENDERS are invited for the ERECTION of Seven HOUSES at the ABOVE SITE, together with Site Works. Tender documents may be obtained from MR. THOMAS M. M. E., Engineer and Surveyor, Town Hall, Petersfield, upon payment of £2 2s., which will be refunded on receipt of a bona-fide Tender not subsequently withdrawn or the return of the documents.

Tenders must be returned to the undersigned in a sealed envelope endorsed "Borough Road Site 2" not later than 12 Noon on 13th OCTOBER, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

H. H. CREEDON,
Clerk of the Council.

Town Hall,
Petersfield.
September, 1961.

SUPPLEMENT

THE CONTRACT JOURNAL

CONTRACTS

WORCESTERSHIRE COUNTY COUNCIL.

BOROUGH OF OLDSBURY—TAT BANK ROAD.

RECONSTRUCTION OF STONEY LANE CANAL BRIDGE.

TENDERS are invited for RECONSTRUCTION of the ABOVE BRIDGE. The work includes Demolition of the Existing Bridge, Construction of Abutments, Filler Joists, Deck, Steel Bridges, Parapets, Brick walls on Approaches, Kerbing, Paving and Roadworks.

Tender documents can be obtained from the COUNTY SURVEYOR AND BRIDGEMASTER, County Buildings, Worcester, to whom Tenders must be delivered not later than 12 Noon THURSDAY, 28th September, 1961.

The Council does not bind itself to accept the lowest or any Tender.

FLINTSHIRE COUNTY COUNCIL.

QUEENSFERRY BY-PASS.

TENDERS are invited for the FOLLOWING—

(a) Supply and Laying of Electric Cable to the various Items of Illuminated Street Furniture and Equipment on the Above.

(b) Supply and Delivery of Advanced Direction and Direction Signs.

Tender Formularies obtainable from the County Surveyor, Llywelyn, Mold, to be returned to the undersigned before 12 Noon, MONDAY, 25th September, 1961.

W. HUGH JONES,
Clerk of the County Council.

County Buildings,
Mold.

ROYAL BOROUGH OF KINGSTON-UPON-THEMES.

PAINTING OF APPROXIMATELY 320 STREET LIGHTING COLUMN INSTALLATIONS, ETC. (HEIGHT 30FT.), AND APPROXIMATELY 1,600 YD. IRON RAILINGS.

TENDERS are invited for the ABOVE WORKS within the Borough.

Contract documents from Borough Surveyor, Guildhall, Kingston-upon-Thames, on deposit of Five Guineas, returnable on receipt of bona-fide Tender not subsequently withdrawn.

Tender to be submitted by First Post, TUESDAY, 19th September, 1961.

The Council does not bind itself to accept the lowest or any Tender.

L. V. POWELL,
Town Clerk.

Guildhall,
Kingston-upon-Thames.
29th August, 1961.

BOROUGH OF SCARBOROUGH.

TOWN HALL EXTENSIONS.

TENDERS are invited for the ABOVE WORK, consisting of the Erection of Two Wings to the Town Hall of approx. 377,360 and 162,700 cu. ft.

Specifications, Bills of Quantities and Form of Tender sent on payment of £3 3s. deposit, refunded on receipt of bona-fide Tender.

Drawings and General Conditions of Contract available for inspection at the Office of the undersigned. Tenders must be returned sealed in the envelope supplied not later than Noon, 29th SEPTEMBER, 1961. The Council does not undertake to accept the lowest or any Tender.

V. FORSHAW,
Borough Engineer.

Town Hall,
Scarborough.

BASILDON URBAN DISTRICT COUNCIL.

SURFACE WATER SEWER—

PERRY STREET TO BRIGHOUSE, BILLERICAY.

TENDERS will shortly be invited for the ABOVE and ancillary works. Contractors should apply for documents to the ENGINEER AND SURVEYOR, Basildon U.D.C., 88 Town Square, Basildon, by 14th SEPTEMBER, with £2 2s. deposit (refundable).

BURGESS HILL URBAN DISTRICT COUNCIL.

The Council invites TENDERS for the SUPPLY and DELIVERY of the FOLLOWING TOOLS and EQUIPMENT:

(a) 2½-ton capacity High Lift Jack.

(b) Electrically driven Bench Grinder and Accessories.

(c) Electrically driven Trolley-mounted Garage Type Air Compressor.

(d) Pair of 4-ton capacity Axle Stands.

(e) Universal Valve Spring Compressor.

(f) General Duty Blowpipe Acetylene Welding Set.

(g) Set of Commercial Heavy Duty ¾in./1in. Drive Socket Spanners.

(h) Set of Commercial Heavy Duty Ring Spanners.

(i) One 1in./2in. and One 2in./3in. Micrometers.

(j) Certain Miscellaneous Items.

Details of requirements and Form of Tender may be obtained on application to the undersigned, to whom Tenders, in plain officially sealed envelopes, endorsed "Tools and Equipment," should be addressed and delivered not later than the 25th SEPTEMBER, 1961.

STANLEY JEFFS,
Clerk of the Council.

Council Offices,
32 Church Road,
Burgess Hill.

NORTH KESTEVEN RURAL DISTRICT COUNCIL.

WATER SUPPLY IMPROVEMENT SCHEME—

CONTRACT NO. 4.

TENDERS are invited for the CONSTRUCTION of approx. 3,050yd. of 9in. dia. and 1,050yd. of 6in. dia. SPUN-IRON WATER MAIN in the Parishes of DUNSTON and NOCTON in the North Kesteven Rural District in Lincolnshire.

Contractors wishing to Tender should apply for the relevant documents to the Council's Water Supply Engineering Officer, JOHN H. HAISTE AND PARTNERS, Belmont House, 20 Wood Lane, Headingley, Leeds, 6, enclosing a deposit cheque value £3 3s., made payable to "North Kesteven R.D.C." This deposit cheque will be returned upon receipt of a bona-fide Tender not subsequently withdrawn and the return of all documents.

Tenders with the Bills of Quantities priced in ink, should be received by the undersigned, in plain envelopes endorsed "Water Supply Improvements—Contract No. 4," not later than FRIDAY, 22nd September, 1961.

The Council do not bind themselves to accept the lowest or any Tender they may receive.

F. FOSTER,
Clerk of the Council.

Council Offices,
31 Clasketgate
Lincoln.

CONTRACTS

COUNTY BOROUGH OF WALLASEY.

HOUSING SITE, P.B.—SITE PREPARATION.

ROADS AND SEWERS.

TENDERS are invited by 10 a.m. on THURSDAY, the 21st September, for the CONSTRUCTION of SEWERS, PITCHED CARRIAGeways, and other Industrial Works, in the ABOVE ESTATE, lying south of Hoylake Road, Morton.

Forms of Tender, together with copies of Conditions, Specifications and Bill of Quantities, obtainable from the Borough Engineer and Surveyor, Town Hall, Wallasey, on payment of a deposit of £2, which will be returned on receipt of a bona-fide Tender.

A. G. HARRISON,
Town Clerk.

COUNTY BOROUGH OF GATESHEAD.

TENDERS FOR THE CONSTRUCTION OF ELGIN ROAD.

TENDERS are invited for the CONSTRUCTION of approx. 290yd. of ELGIN ROAD, Gateshead. Specification, Bills of Quantities and Form of Tender obtainable from the Office of the Borough Surveyor, Swinburne Street, Gateshead, 8, and must be returned to me by 12 Noon, TUESDAY, 19th September, 1961.

C. D. JACKSON,
Town Clerk.

CITY OF LEICESTER.

EYRES MONSELL ESTATE—

MONTRÉO ROAD DEVELOPMENT.

TENDERS are invited from suitably experienced contractors for the ABOVE DEVELOPMENT, which includes the FOLLOWING:

Site Clearance, 1,600 4½ acres.

Foul and Surface Water Sewers, approx. 491 lin.

yd. of 9in. S.G.S.W. Pipe.

Lean-mix Concrete Carrigeways, approx. 2,220 sq. yd.

Garage Sites, approx. 2,600 sq. yd.

Flagged Footways, Turfed Verges and other ancillary works.

Tender documents, which may be obtained on payment of One Guinea, refundable on receipt of a bona-fide Tender, are to be returned, in the official envelope, by 4.30 p.m. on MONDAY, 2nd October, 1961.

JOHN L. BECKETT, M.I.C.E.,
City Surveyor.

CITY OF PORTSMOUTH.

LEIGH PARK DEVELOPMENT.

CONTRACT NO. 35—KERBS, FOOTWAYS, VERGES AND HARDSTANDING AREAS—PROSPECT FARM.

TENDERS are invited for the ABOVE CONTRACT.

The works include approx. 2,100 lin. yd. of Kerb, 3,800 sq. yd. of Asphalt Footway, 1,800 sq. yd. of Grass Verges, and 2,000 sq. yd. of Concrete Hardstanding Areas.

Tender documents may be obtained from the City Engineer at the Municipal Offices, 1 Clarence Parade, Southsea, Hants., on payment of a deposit of £2 (Two Pounds), which will be returned on receipt of a bona-fide Tender and/or the return of all the documents.

Tenders enclosed in the envelope provided, must be delivered to the undersigned not later than Noon on TUESDAY, 3rd October, 1961.

J. R. HASLEGRAVE,
Town Clerk.

IRLAM URBAN DISTRICT COUNCIL.

GLAZE ESTATE—FLAGGING.

TENDERS are invited for the LAYING of approx. 750 sq. yd. of PRECAST CONCRETE FLAGGING to new FOOTPATHS on the GLAZE ESTATE, CADISHEAD.

Tender documents can be obtained from the ENGINEER AND SURVEYOR, Council Offices, Irlam, on payment of a deposit of One Pound, returnable upon receipt of a bona-fide Tender. The closing date is receipt of Tenders, 10 a.m., 13th OCTOBER, 1961.

The Council do not bind themselves to accept the lowest or any Tender.

WILLITON RURAL DISTRICT COUNCIL.

PORLOCK SEWERAGE SCHEME.

RELIEF AND STORM WATER SEWERS.

TENDERS are invited for the FOLLOWING CONSTRUCTIONAL WORK:

(a) 404yd. of 18in. dia. Concrete Storm Water Sewer.

(b) 63yd. of 15in. dia. Concrete Foul Sewer.

(c) 612yd. of 12in. dia. Concrete Foul Sewer.

(d) Nine Storm Water Overflow Chamber.

And certain ancillary works.

Drawings and Conditions of Contract will be available for inspection at the Offices of the Engineer and Surveyor, Mr. S. E. BALCH, A.M.I.Mun.E., Council Offices, Port Street, Worksop, Nottingham, Somer.

Form of Tender, Specification and Bill of Quantities can be obtained from the Engineer upon payment of a deposit of Three Guineas by cheque, which will be refunded upon the receipt of a bona-fide Tender and the return of all documents.

Tenders will be delivered to the undersigned not later than Noon on MONDAY, 2nd October, 1961. The envelope should bear no name or mark indicating the identity of the sender.

The Council do not bind themselves to accept the lowest or any Tender.

F. P. RISDON,
Clerk.

Council Offices,**Fore Street,****Williton.**

31st August, 1961.

TRENT RIVER BOARD.

TAMWORTH FLOOD PROTECTION SCHEME.

TENDERS are invited for the EXCAVATION and DELIVERY of SPOIL. The contract involves the Excavation of SPOIL from two sites near Tamworth, Staffs., and Delivery to Disposal Sites over a maximum distance of about five miles.

Contract documents obtainable from the Engineer, Trent River Board, 206 Derby Road, Nottingham, on payment of £5. The Tender must be submitted, only on receipt of a bona-fide Tender (not subsequently withdrawn) and the return of all contract documents. Applications for documents must be received by 15th SEPTEMBER, 1961.

IAN DRUMMOND,
Clerk of the Board.

CONTRACTS

OXFORDSHIRE COUNTY COUNCIL.

HIGHWAYS ACT, 1959.
(PRIVATE STREET WORKS CODE.)

SUMMERFIELD RISE, GORING.

TENDERS are invited for the CONSTRUCTION of FOOTPATHS and VERGES and MINOR DRAINAGE WORKS at SUMMERFIELD RISE, GORING. Forms of Tender, together with Plans, Specifications and Bills of Quantities may be obtained from the County Surveyor, 8 New Road, Oxford, to whom they should be returned, in a plain envelope, endorsed "Summerfield Rise," not later than TUESDAY, 26th September, 1961.

The Council do not bind themselves to accept the lowest or any tender.

GERALD GALE BURKITT.
Clerk of the Council.

County Hall,
Oxford.

September, 1961.

BUCKS. COUNTY COUNCIL.

RECONSTRUCTION OF TAYLORS LANE BRIDGE, LITTLE MISSENDEN.

TENDERS are invited on a fixed-price basis for the DEMOLITION of the existing Brick Arch BRIDGE and the construction of a new bridge over the River Misbourne, square span 6ft., width 32ft. 6in., comprising Mass Concrete Abutments and Wing Walls, Reinforced Concrete Deck and Invert, and ancillary works.

Contract Documents and Drawings may be obtained from the County Surveyor, County Offices, Aylesbury, on payment of a deposit of £2, returnable on receipt of a bona-fide Tender, and all drawings issued.

Tenders must be delivered to the undersigned by 2nd OCTOBER, 1961, in the envelope provided, endorsed "Taylors Lane Bridge".

The Council do not bind themselves to accept the lowest or any tender.

R. E. MILLARD.
Clerk of the County Council.

COUNTY BOROUGH OF BLACKBURN.

TRAFFIC SIGNS.

Firms wishing to TENDER for the SUPPLY of NO WAITING and LIMITED WAITING SIGNS, complete with Post, should submit names to the Borough Engineer, Town Hall, Blackburn, by the 30th SEPTEMBER, 1961.

FRANK SQUIRES.
Town Clerk.

COUNTY BOROUGH OF BLACKBURN.

PLANT.

Firms wishing to TENDER for the SUPPLY of THREE 15cwt. Diesel driven DUMPERS should submit their names to the Borough Engineer, Town Hall, Blackburn, by the 30th SEPTEMBER, 1961.

FRANK SQUIRES.
Town Clerk.

BOROUGH OF WALTHAMSTOW.

SHERNHALL STREET IMPROVEMENT—
EASTERN ROAD TO OLIVER ROAD.

TENDERS are invited for the WIDENING and RESURFACING of SHERNHALL STREET between Eastern Road and Oliver Road, Walthamstow, E.17. Three new Foundations will be of Lean Concrete and the Surfacing Hot Rolled Asphalt.

Tender documents may be obtained from the Borough Engineer and Surveyor upon payment of a deposit of £10, returnable in respect of a bona-fide Tender, not later than 2nd October, 1961.

Sealed Tenders in the envelopes provided, must be received by the undersigned not later than 12 Noon on THURSDAY, 28th September, 1961. No Tender, the envelope of which bears any name or mark indicating the identity of the tender, will be considered.

G. A. BLAKELEY.
Town Clerk.

30th August, 1961.

CARSHALTON URBAN DISTRICT COUNCIL.

DEMOLITION OF PUBLIC TRENCH SHELTER—
BANSTEAD DOWNS.

TENDERS are invited for the DEMOLITION of an UNDERGROUND TRENCH SHELTER.

Form of Tender and Specification may be obtained from the Office of the Engineer and Surveyor, Stone Court, Carshalton, Surrey.

No Tender will be accepted unless in a plain sealed envelope, addressed to the Chairman of the Council at these Offices, and delivered not later than 12 Noon on MONDAY, 25th September, 1961. The envelope must be endorsed "Demolition of Public Trench Shelter." It must not bear any name or mark indicating the identity of the tender.

The Council do not bind themselves to accept the lowest or any tender.

C. H. DURRANT.
Clerk of the Council.

Council Offices,
The Grove,
Carshalton, Surrey.

WEST KESTEVEN RURAL DISTRICT COUNCIL.

SOUTH WITHAM SEWERAGE AND SEWAGE DISPOSAL SCHEME.

TENDERS are invited from experienced Civil Engineers for the LAVING of about 2,400vrf. of 6in. and 8in. dia. PIPE, SEWERS, and the CONSTRUCTION of a PUMPING STATION, BALANCING TANK, and sundry other works at the existing Sewage Disposal Works, at SOUTH WITHAM, about 10 miles south of Grantham.

Plans, specifications and Bills of Quantities may be seen at the Office of the Council's Consulting Engineers, Messrs. Elliott and Brown, Stanley House, Pelham Road, Nottingham, and copies of the Quantities and Form of Tender may be obtained from them on deposit of Five Guineas (by cheque payable to the West Kesteven (R.D.C.), which will be refunded on receipt of bona-fide Tender, not afterwards withdrawn and return of all documents) loaned to the Contractor within seven days of notice informing him that a Tender has been accepted.

Tenders in plain sealed envelopes endorsed "South Witham Sewerage Scheme" should be delivered to me at Sandon Close, Grantham, not later than the first post on FRIDAY, October 6th, 1961. The lowest or any tender will not necessarily be accepted.

Acceptance of Tender will be subject to the final approval of the Ministry of Housing and Local Government. Work to be commenced immediately such approval is received.

J. R. MORGAN.
Clerk of the Council.

CONTRACTS

BEDFORDSHIRE COUNTY COUNCIL.

IPSWICH-WEEDON TRUNK ROAD A.428.

IMPROVEMENT FROM BEDFORD BOROUGH BOUNDARY TO BLOODY BATTLE BRIDGE.

TENDERS are invited for the WIDENING and REALIGNMENT of a section of the TRUNK ROAD approx. 1,200yd. in length. The works entail the Clearing Site, Earthworks, Surface Water Drainage, Capping, Construction in Dry Lean Concrete and Hot Rolled Asphalt, Diversion of a Stream and the Construction of a 14ft. span Bridge with Reinforced Concrete Slab Deck.

Copies of the Conditions of Contract, Specification and Bills of Quantities may be obtained from the County Surveyor, Bedford, on receipt of a deposit of Two Pounds which will be returned on receipt of a bona-fide Tender or return of documents before closing date. Detailed Drawings may be inspected by appointment.

Tenders must be delivered to the undersigned on or before FRIDAY, 29th September, 1961, in the envelope provided.

The contract is subject to the approval of the Ministry of Transport, and the Council do not bind themselves to accept the lowest or any tender received.

GEORGE BREWIS.

Clerk of the County Council.

Shire Hall,
Bedford.
September, 1961.

CITY OF PORTSMOUTH.

TENDERS are invited for the SUPPLY and DELIVERY of 1,892 APRON SIGNS and 640 CONDITIONS PLATES, to be made of Laminated Plastic or other suitable material, for fixing to existing standards, "prongs" and 10 pairs BRAZETS, Mild Steel, Rustproofed or other suitable material.

Forms of Tender may be obtained upon application to the Supplies Officer, Central Depot, Eastern Road, Portsmouth, and Tenders must be returned to the undersigned in the envelope provided, not later than 12 o'clock Noon on TUESDAY, 26th September, 1961. The envelope must not bear any name or mark indicating the sender.

J. R. HASLEGRAVE.

Town Clerk.

STOKE-ON-TRENT CORPORATION.

THE OLD PORT VALE FOOTBALL GROUND, HANLEY.

DISMANTLING OF COVERED STAND, STEEL SUPERSTRUCTURE, DEMOLITION OF REINFORCED CONCRETE STAND, RETAINING WALLS AND GRADING OF GROUND AND INCIDENTAL WORKS.

The Corporation invites TENDERS for the ABOVE. Contractors desirous of tendering must make written application to the Clerk of the City Council, Stoke-on-Trent, not later than THURSDAY, 14th September, 1961, enclosing £2 deposit, which will be returned on submission of a bona-fide Tender and the return of the particulars.

Tenders are to be delivered to the undersigned not later than 12 Noon on MONDAY, 9th October, 1961.

HARRY TAYLOR.

Town Clerk.

CONTRACTS AVAILABLE.—Roads, Sewers, Light and Heavy Civil Engineering, Excavation and Building. No need to be short of work if you use Britain's top PRIVATE ESTIMATOR and give your tenders a chance to win more work.

Write or telephone now for free copy of the "Practical Help with modest fees." Phone, call or write: R. J. CARR, 73 Leadenhall Street, London, E.C.3. Telephone: Avenue 9676-1120.

For Contracts received too late for classification see page 1169

APPOINTMENTS VACANT

NORFOLK COUNTY COUNCIL.

HIGHWAYS DEPARTMENT.

APPLICATIONS are invited for the UNDERMENTIONED APPOINTMENTS at Head Office, Norwich:

Two Senior Engineers (Roads), Grade IV/V (£1,140-£1,480 p.a.).

Applicants should be Associate Members of the Institution of Civil Engineers, or hold an equivalent qualification by examination. They must be competent Surveyors, having had experience of the design of major improvements in setting-out and construction.

A motor car is essential and the appointed officers will be paid an essential user's car allowance in accordance with the recommendations of the National Joint Council, as adopted and applied from time to time by the County Council. Loans available for purchase of equipment.

The appointments will be on the permanent establishment of the Department, terminable by one month's notice on either side. The Provisions of the Local Government Superannuation Acts, 1937 to 1953, apply. The successful candidates will be required to pass a medical examination. Grant towards removal expenses.

The National Joint Council Service Conditions apply in general.

Further particulars and Application Forms obtainable from COUNTY SURVEYOR, County Offices, Thorpe Road, Norfolk, NOR 47A. Closing date for completed Application Forms: 22nd SEPTEMBER, 1961.

LINDSEY COUNTY COUNCIL.

HIGHWAYS DEPARTMENT.

VACANCY on A.P.T. III/IV (£590-£1,310 p.a.) for fully qualified ENGINEERING ASSISTANT with practical experience of highway design and construction. Local Authority experience not essential. 5-day week and 2½ hours overtime. N.I.C. Conditions of employment must be received by 19th SEPTEMBER, 1961, on forms obtainable from COUNTY SURVEYOR, County Offices, Lincoln.

BOROUGH OF TOTTENHAM.

APPLICATIONS are invited for an established post of ESTIMATING and COSTING SURVEYOR in the Borough Engineer and Surveyor's Department.

A.P.T. Grade II (£815-£960 per annum). London weighting allowance of £25 or £40 per annum payable in addition to commencing salary according to experience and ability.

Application form and conditions of appointment, which should be returned not later than the 16th SEPTEMBER, 1961, are obtainable from the Borough Engineer and Surveyor (C.J.), Town Hall, Tottenham, N.15.

M. LINDSAY TAYLOR.

Town Clerk.

APPOINTMENTS VACANT

COUNTY OF ANGUS.

ROADS DEPARTMENT.

APPOINTMENT OF ASSISTANT FOREMAN FITTER MECHANIC FOR LONGHAUGH REPAIR WORKSHOP.

APPLICATIONS are invited for APPOINTMENT as ASSISTANT FOREMAN FITTER MECHANIC for work shops at Longhaugh Depot, Dundee.

The successful applicant must be fully conversant with all aspects of mechanical maintenance of diesel and petrol road vehicles and other plant.

The hours of service are 42 per week, with a wage rate of 5s. 9d. per hour, and there is a superannuation scheme in operation. Subject to satisfactory service, the person appointed will succeed the present foreman in charge in February, 1962.

Applications in writing, giving full particulars, to be lodged with the County Road Surveyor, County Buildings, Forfar, by 20th SEPTEMBER, 1961.

IAN A. MACKNIGHT.
County Clerk.

County Buildings,
Forfar.

ADMINISTRATIVE COUNTY OF LEICESTER.

DEPUTY COUNTY ENGINEER AND SURVEYOR.

APPLICATIONS are invited from Chartered Civil or Municipal Engineers for the APPOINTMENT of DEPUTY COUNTY ENGINEER AND SURVEYOR. The corresponding salary will be within the scale £2,505-£2,756, according to qualifications and experience.

Candidates must have had considerable experience in the design, construction and maintenance of civil engineering works, particularly roads and bridges, and in the supervision of such works at drawing office stage and on site.

Preference will be given to candidates who have acquired administrative and technical experience in a large organisation.

Applications giving full particulars and names and addresses of two referees, should reach the COUNTY CLERK, County Offices, Great Friars, Leicester, not later than 14th OCTOBER, 1961.

Canvassing disqualifies.

COUNTY BOROUGH OF BURY.

APPLICATIONS invited for APPOINTMENT of a TEMPORARY CIVIL ENGINEERING CLERK OF WORKS for a sewage works extension scheme. Salary Miss. VI (£760-£825).

Applicants must be capable of dealing with large contracts covering all aspects of sewage works construction. The duration of the first contract is approx. six months, but it is possible that the appointment will be extended for a period of up to five years until the completion of the first stage extensions.

Applicants, giving full details of experience, present and previous appointments, together with the names of two referees, must reach me by 30th SEPTEMBER, 1961.

EDWARD S. SMITH.
Town Clerk.

Town Hall,
Bury.

22nd August, 1961.

BOROUGH OF KETTERING.

APPOINTMENT OF SENIOR ENGINEERING ASSISTANT.

APPLICATIONS are invited for the APPOINTMENT in the Borough Surveyor's Department of SENIOR ENGINEERING ASSISTANT at a salary in accordance with A.P.T. Grade IV (£1,140-£1,310 p.a.) of the National Scales of Salaries.

Candidates must hold the Testamur of the Institution of Municipal Engineers, or an equivalent qualification. The type of work carried out in the Borough Surveyor's Department is of a varied character, and would offer good experience to the successful candidate.

Housing accommodation will be available if required.

The appointment will be subject to the National Scheme of Conditions of Service, and Local Government Supplementary Scheme.

Applications, stating age, qualifications and experience, together with the names of two referees, should reach the undersigned not later than the 23rd SEPTEMBER, 1961.

D. DUNSFORD PRICE.
Town Clerk.

Council Offices,
Hussey Place,
Kettering.

BOROUGH OF EALING.

LAND SURVEYING ASSISTANT, A.P.T. II (£855-£1,000 inclusive); 5-day week.

Application Forms, with full particulars and conditions of service, from Borough Surveyor, Town Hall, Ealing, W.S. Closing date: 23rd SEPTEMBER, 1961.

E. J. COPE-BROWN.
Town Clerk.

CITY OF CARLISLE.

APPOINTMENT OF CLERK OF WORKS.

APPLICATIONS are invited for the ABOVE APPOINTMENT in the City Engineer's Department. Salary, £12 per week.

The appointment, which is temporary for a period of 18 months with possible further extension, is in the first instance for the supervision of construction of roads and sewers on housing estates, but may include other works of a similar nature.

Applications, giving age, training, full details of experience with names and addresses of two persons to whom reference may be made, to City Engineer, 18 Fisher Street, Carlisle, not later than 23rd SEPTEMBER, 1961.

H. D. A. ROBERTSON.
Town Clerk.

CITY OF CARLISLE.

CITY ENGINEER'S DEPARTMENT.

APPLICATIONS are invited for the POST of RESIDENT ENGINEER to supervise a contract for the construction of a trunk sewer, work on which is estimated to last approximately 18 months.

The appointment is temporary for the duration of the above contract, but, subject to satisfactory service and to approval being obtained to continue the work, may be extended for the duration of the proposed works. The salary offered is £1,300 per annum.

Applications, with details of qualifications, experience and age, and the names and addresses of two referees, are to be received by the City Engineer, 18 Fisher Street, Carlisle, not later than 23rd SEPTEMBER, 1961.

H. D. A. ROBERTSON.
Town Clerk.

September 7 1961

APPOINTMENTS VACANT

PROTECTORATE WORKS SERVICES.
ADEN.

SENIOR EXECUTIVE ENGINEER.

Qualifications: Candidates aged 35-45 must be A.M.I.C.E. Duties: Survey and advise on public works requirements in Aden Protectorate and to plan and supervise execution of approved schemes including building and engineering.

Terms of Appointment: One contract for one tour of 18-24 months in first instance. Emoluments (including gratuity) £2,728 p.a.

For passage, Education and Children's allowances.

Apply: Director of Recruitment, Department of Technical Co-operation, Carlton House Terrace, London, S.W.1, quoting BCD.112/2/08/D14, and giving full name, age, and brief details of qualifications and experience.

LONDON COUNTY COUNCIL
HOUSING DEPARTMENT—WORKS DIVISION.

TECHNICAL ASSISTANTS REQUIRED for superannuation units in Works Division, Housing Department. Salaries up to £960, according to experience and qualifications.

(i) Surveyors for measuring and operation of incentive scheme for bonus payments for all trades on new construction and large-scale modernisation and conversions.

(ii) Surveyors for the preparation of schedules of materials from drawings and specifications for ordering purposes.

Application should be made by letter not later than SEPTEMBER 18th, giving age, full name, age, qualifications and experience, to the DIRECTOR OF HOUSING (G.1/C/2449/9), County Hall, S.E.1.

LONDON COUNTY COUNCIL
PARKS DEPARTMENT.

QUANTITY SURVEYING ASSISTANTS REQUIRED to work on preparing approximate estimates, measuring variations and preparing and agreeing final accounts for:-

(1) Building contracts.

(2) Grounds layouts. Salary up to £960, according to qualifications and experience. Possibilities for further advancement on merit.

Apply CHIEF OFFICER (A1/C/2470/9), L.C.C. Parks Department, County Hall, S.E.1 (Waterloo 5000—Ext. 8076).

CITY OF CARDIFF.
CORPORATION WATERWORKS.

APPOINTMENT OF ENGINEERING ASSISTANTS. VACANCIES exist for ENGINEERING ASSISTANTS, A.P.T. III/IV (£960-£1,310), on the permanent establishment of the Water Engineer and Manager. Commencing salaries up to £1,140 p.a., according to experience.

Candidates for the posts should have passed Parts "A" and "B" of the Examination of the Institution of Civil Engineers, or obtained a University Degree in Civil Engineering, and have completed two years' practical training.

Housing accommodation will be available for at least one candidate.

General Conditions of Appointment can be obtained from the Water Engineer and Manager, Municipal Offices, Greyfriars Road, Cardiff.

Applications, stating age, previous experience, and qualifications, together with the names of two referees, should reach the undersigned, in envelopes endorsed "Engineering Assistants—Waterworks," not later than TUESDAY, 19th September, 1961.

S. TAPPER-JONES,
Town Clerk.

City Hall,
Cardiff.
21st August, 1961.

IRLAM URBAN DISTRICT COUNCIL
RESIDENT ENGINEER.

APPLICATIONS are invited for the ABOVE APPOINTMENT in connection with a main drainage scheme. Period 12 months (approximately). Total remuneration £1,550 per annum plus car allowance. Suitable housing accommodation provided if necessary.

Applications, endorsed "Resident Engineer," stating age, qualifications and experience, with the names of two referees, to the CLERK OF THE COUNCIL, Council Offices, Irlam, by 22nd SEPTEMBER, 1961.

WYCOMBE RURAL DISTRICT COUNCIL
ASSISTANT RESIDENT ENGINEER.

The COUNCIL REQUIRE an ASSISTANT RESIDENT ENGINEER to supervise the construction of sewerage schemes. Salary £1,200 per annum. Duration of contract, six months. Car allowance payable in accordance with approved scale for cars not exceeding 1,110 c.c.

Candidates, who must have had similar experience should apply, in writing, within the next 10 days, to the Council's Consulting Engineers, Messrs. D. Balfour and Sons, 131 Victoria Street, Westminster, S.W.1, giving particulars of experience and names of persons to whom reference may be made.

L. C. RYSDALE,
Clerk of the Council.

Council Offices,
17 High Street,
High Wycombe,
7th September, 1961.

SUNDERLAND AND SOUTH SHIELDS
WATER COMPANY.

ASSISTANT TO SUPPLY ENGINEER.

APPLICATIONS are invited for the POST of ASSISTANT to the Supply Engineer of the Company at a salary commencing within the range £885-£1,115 per annum, according to qualifications and experience. Duties will cover a wide range of work, including operation and maintenance of numerous sources of supply, modernisation, and development of new resources.

Applicants should preferably be Graduates or Associate Members of an appropriate Institution but consideration will be given to those possessing a Higher National Certificate in Mechanical Engineering or similar qualifications.

The Company operates a contributory pensions scheme, and a casual user car allowance may also be paid.

Applications giving full particulars and the names and addresses of two referees should be sent to the undersigned not later than 2nd OCTOBER, 1961.

A. G. MCLELLAN,
General Manager.

29 John Street,
Sunderland,
Co. Durham

APPOINTMENTS VACANT

MINISTRY OF COMMUNICATIONS.
POWER AND WORKS, TANGANYIKA.

EXECUTIVE ENGINEERS.

Qualifications: Candidates preferably between 24 and 30 must either have a University degree or equivalent recognised by the Institution of Civil Engineers together with two years' subsequent practical experience; or have passed or be otherwise exempt from parts I and II of the final examinations of the Institution of Civil Engineers and have had not less than five years' practical experience.

Duties: Surveys, reports, designs and specifications for civil engineering works, together with the administration, organisation and supervision of construction and maintenance of such works.

Terms of appointment: Contract for one tour of 21/27 months.

Emoluments: (Salary plus, gratuity). In scale £1,582-£3,060 per annum. Free passages. Generous leave. Free medical attention. Education allowance of up to £200 a child.

Apply: Director of Recruitment, Department of Technical Co-operation, Carlton House Terrace, London, S.W.1, quoting BCD.112/8/03/D14, your full name, age, and brief details of qualifications and experience.

BOROUGH OF ABERYSTWYTH.
RURAL DISTRICT OF ABERYSTWYTH.

WORKS OF SEWERAGE AND WATER SUPPLY.

APPOINTMENT OF RESIDENT ENGINEER.

APPLICATIONS are invited for the TEMPORARY POST of RESIDENT ENGINEER who will work under the direction of the Consulting Engineers (A. H. S. Waters and Partners of Birmingham).

The work, which will be partly completed, comprise the construction of a large reinforced concrete sewage storage tank, together with repairs to sewers in tidal waters; the construction of a reinforced concrete water service reservoir of 650,000 gallons capacity near Aberystwyth; and the execution of minor contractual and repair work, and the storage reservoir some 12 miles from Aberystwyth.

The successful applicant will be required to take up his duties at an early date.

The salary offered is at the rate of £1,550 per annum. Superannuation will be in accordance with the Superannuation Acts. Housing accommodation may be made available in suitable cases.

Applications, endorsed "Resident Engineer," stating age, qualifications and experience, and giving the names and addresses of two Engineers to whom reference may be made, are to reach the undersigned not later than 13th SEPTEMBER, 1961.

W. PHILIP DAVIES,
Town Clerk.

Town Hall,
Aberystwyth,
Cardiganshire.

29th August, 1961.

FAR BAULKER JOINT WATER COMMITTEE.

WORKS OF WATER SUPPLY.

APPOINTMENT OF ASSISTANT RESIDENT ENGINEER.

The Joint Committee invite APPLICATIONS for the POST of ASSISTANT RESIDENT ENGINEER in the construction of approx. 1,000 linear ft. of 18in and 12in. dia. spun-iron water mains, reinforced concrete contact tank, pumping station, access road and incidental works.

The period of this contract is two years and it is anticipated that Assistant Resident Engineer will be required for at least one year thereafter.

The salary offered is £1,100 per annum and a car allowance will be paid on the Casual Users' Scale.

The successful applicant will work under the general direction of the Committee's Consulting Engineers, Messrs. A. H. S. Waters and Partners, and must have had considerable experience on works of the nature described.

Applications, endorsed "Assistant Resident Engineer," stating age, experience and qualifications, accompanied by the names of two persons to whom reference may be made, are to be forwarded to the undersigned so as to reach him not later than MONDAY, 18th September, 1961.

WALTER LAUGHTON,
Clerk to the Far Baulker Joint Water Committee.

Barclays Bank Chambers,
Low Street,
Sutton-in-Ashfield,
Notts.

FIRST-CLASS AGENT REQUIRED for housing contract about to commence in the Hereford area. Good salary, bonus, etc.—Write to Box 1068, c/o MURRAY AND PHELAN, LTD., Columbia House, Aldwych, W.C.2.

JAMES MILLER AND PARTNERS, LTD.

REQUIRE a GENERAL FOREMAN for civil engineering contractors. Numerous good opportunities are offered to a man with drive and ability capable of taking responsibility for major works. Remuneration includes bonus and a pension scheme. If you are considering changing, write, with full details, to:

JAMES MILLER AND PARTNERS, LTD.,
Pump Lane, Hayes, Middlesex.

SUB-AGENT REQUIRED by building and civil engineering contractors for a large contract in the Hereford area.—Apply in writing, giving details of age, experience and salary required, to LAVENDER MC MILLAN (CONTRACTORS), LTD., 54 Cheam Common Road, Worcester Park, Surrey.

PAULING AND COMPANY LTD.

are revising their register of CIVIL ENGINEERING STAFF desirous of taking up overseas appointments. They would welcome hearing from Engineering and Office Staff, also General Foremen, Section Foremen all categories, Plant Fitter and Fitters. Those interested should send brief summary of training and experience, together with personal details, such as age, marital status, etc.—Write to:

PAULING AND COMPANY, LTD.,
26 Victoria Street, London, S.W.1.

ENGINEERS, preferably qualified, are invited to apply for the position of SENIOR AGENT on a heavy civil engineering contract abroad. Considerable experience with contractors and wide administrative experience are essential. Please give full details of career.—Write Box V.4770, "The Contract Journal."

APPOINTMENTS VACANT

SURFACING SUPERVISOR REQUIRED for work in Midlands. Must be capable of measuring, ordering materials and controlling hand and machine gangs. Car provided. ROADS RECONSTRUCTION (CONTRACTING), LTD., Midland Area, 106 Gold Street, Wellington, Northants.

THE MITCHELL CONSTRUCTION CO., LTD.

REQUIRE AGENT for large hospital contract in East Midlands. Must be experienced, possess drive and initiative. Participation in company's bonus and pension schemes. First-class salary offered.—Apply, in writing, with details of experience, to:

Contracts Manager (Building),
THE MITCHELL CONSTRUCTION CO., LTD.,
Wharf Works, Peterborough.

SENIOR ENGINEER/AGENT REQUIRED to take charge of small- and medium-sized contracts in Midlands area. Wide experience in the field and experience of handling several contracts collectively essential. Excellent opportunity for fully trained and qualified Engineer for advancement to a position of management responsibility in a small, expanding company. Writing rates, starting age, qualifications, experience, salary required and when free, to Box V.4731, "The Contract Journal."

CIVIL ENGINEER, with degree or A.M.I.C.E., age 28-32, REQUIRED in head office of well-established firm of quantity specialists. Permanent and progressive post for the right man. Must have broad civil engineering background, including site experience with contractors. Varied and unique experience offered in areas for design and preparation of remedial schemes, tendering, planning and organisation of contracts. Excellent prospects for man with ability and drive. Pension scheme.—Apply in confidence, stating age, education, experience, and present salary, to T. WHITLEY MORAN, M.I.C.E., 5 Old Hall Street, Liverpool, 3.

MARTIN COWLEY, LTD.

REQUIRE a CIVIL ENGINEERING QUANTITY SURVEYOR at head office, to take responsibility for all measurements and final accounts. This is an excellent opportunity for an ambitious energetic surveyor aged between 30 and 40, who has experience in a similar capacity with a large contractor. Salary not less than £2,000. Car provided.—Apply, giving full details of experience, to:

The Managing Director,
MARTIN COWLEY, LTD.,
Clay Cross, Derbyshire.

A GENT WANTED for concrete piled sea outfall in South Wales. The appointment will be a permanent one, and offers excellent prospects to a keen young Engineer with some previous experience of piling work.—Write in confidence to Box V.4612, "The Contract Journal."

ESTIMATOR REQUIRED for building and civil engineering contractors with head office situated in Shropshire. £50,000 to £500,000.—Write, stating age, experience, and salary required, to Box 1066, c/o Murray and Phelan, LTD., Columbia House, Aldwych, W.C.2.

PLANT FITTER REQUIRED, experienced plant lorries. Top rates paid.—Apply: C. J. PEARCE AND CO., LTD., Public Works Contractors, Southall, Dawley, near Wellington, Salop. Tel.: Dawley 521.

M. J. GLEESON (CONTRACTORS), LTD.

REQUIRE SENIOR ENGINEER and GENERAL FOREMAN for a large building contract in the London area. Please send full particulars to:

Personnel Officer,
M. J. GLEESON (CONTRACTORS), LTD.,
Harestone House, London Road, North Cheam, Surrey.

SALES MANAGER WANTED. We can offer a really progressive position in the Southern Counties for an energetic person who has the drive and determination to produce good results. Naturally, all applications will be treated in the strictest confidence.—GREENHAM EQUIPMENTS, LTD., Clayton Road, Risipin Road, Greenford, Middlesex.

BUYER WANTED by medium-sized building and civil engineering contractors with head office in Surrey. Must be fully conversant with bills of quantities and able to take up quantities from drawings.—Write, stating age, experience, and salary required, to Box 1067, c/o Murray and Phelan, LTD., Columbia House, Aldwych, W.C.2.

EXPERIENCED civil engineering GENERAL FOREMAN REQUIRED for large contract overseas. Write particulars to Box V.4771, "The Contract Journal."

A GENT/GENERAL FOREMAN REQUIRED immediately for sewerage scheme in S.W. England. Only experienced men need apply.—E. THOMAS AND CO., LTD., Falmouth, Cornwall.

HUSSEY, EGAN AND PICKMERE, LTD.

A number of vacancies are available for SENIOR and JUNIOR ENGINEERS on contract sites in England and Wales. Permanent posts with attractive prospects. Apply, with details of education, training and experience, to:

HUSSEY, EGAN AND PICKMERE, LTD.,
24 Calthorpe Road, Edgbaston, Birmingham, 15.
Telephone: Edgbaston 3661.

A GENT, SUB-AGENTS and **ENGINEERS** REQUIRED by civil engineering contractors for sewerage and drainage works, central and South Wales and the Manchester area. Permanent positions for suitable applicants.—Write, giving full details of previous experience and stating age and salary required, to Box V.4754, "The Contract Journal."

SENIOR GENERAL FOREMAN REQUIRED for prestressed concrete bridgework in London area, to take full charge, assisted by Engineers. Good terms and remuneration are offered, with bonus on results. Good prospects. Pension scheme. Details of experience and qualifications required.

Write Box V.4756, "The Contract Journal."

WEST LONDON building contractors REQUIRE an ambitious man to manage and expand the business.—State age, experience and salary required, to Box V.4761, "The Contract Journal."

APPOINTMENTS VACANT

GENERAL FOREMEN, CARPENTERS, BRICKLAYERS, GANGERS REQUIRED for C.E. building. Permanent positions for work in London area.—Apply C. J. SIMS, LTD., 2 Victoria Street, S.W.1. Telephone: ABB. 7645.

BUILDING SENIOR QUANTITY SURVEYOR.—This permanent vacancy is for a really first-class surveyor experienced at working on own initiative and being responsible for surveying duties in connection with a group of large contracts. Applications, in confidence, to Box V.4753, "The Contract Journal."

AGENT/BUILDING MANAGER

An interesting and progressive post with an established building company in Guernsey is available for a man with initiative or suitable ability. He must be fully conversant with reinforced concrete structures and general building practice, and be able to estimate, and be responsible for contracts up to final account. Apply, in writing, to:

GUERNSEY CONTRACTORS, LTD.
Bulwer Avenue, St. Sampson's, Guernsey, C.I.

COST CONTROLLER.—Vacancies occur in a recently formed department dealing with matters which affect the financial result of all types of building and civil engineering projects. The men required must be able to measure all main trades and be capable of producing estimates of labour, plant and material expenditure for site management.—Only applicants with experience in this type of work and who are interested in the increasingly important field of target costing, should apply to: **WILSON LOVATT AND SONS, LTD.**, Clarence Street, Wolverhampton.

GENERAL FOREMEN

REQUIRED FOR:

(a) **REINFORCED CONCRETE STRUCTURES** in the United Kingdom—through practical experience of high-class construction essential—building knowledge would be an advantage.

(b) **ALL TYPES OF HEAVY INDUSTRY ENGINEERING FOUNDATION and MARINE WORKS**—sound knowledge of all forms of pile driving essential—experience of reinforced concrete construction an advantage.

Only keen men with initiative and drive who are able to produce good work with economy should apply. Permanent positions with pension scheme for the right man. Car supplied where required for business. Apply, in writing, giving full details of age, experience and salary required, to:

PETER LIND AND CO., LTD.
Romney House,
Tufton Street, Westminster, London, S.W.1.

BUILDING CONTRACTS—SITE COST MANAGEMENT.—Applicants invited from experienced men trained to H.N.C. level in building and quantity surveying and able to measure and cost all normal operations on sites for labour, materials and plant. This is a new appointment with considerable scope for the right man to join the staff of an expanding old-established building contractor in the Midlands. Write Box V.4751, "The Contract Journal."

DEVELOPMENT ENGINEER

Applications for the position of DEVELOPMENT ENGINEER are invited from qualified engineers with considerable experience in reinforced and prestressed concrete design. The successful applicant will be responsible for the development of new designs and existing products. He will also take charge of the design office. Experience in precast concrete production would be an advantage but is not essential. This is a senior position in an expanding department, offering wide scope for an engineer with drive and enthusiasm. Write, in confidence, with full details of qualifications and experience, to:

The Staffing Officer,
THE STANTON IRONWORKS CO., LTD.,
P.O. Box No. 3, near Nottingham.

ASSISTANT CHIEF ESTIMATOR.—Building contractor with an established connection in many fields of construction invites applications from fully trained and experienced ESTIMATORS for this permanent position. Age not over 40 years and able to produce successful records over the last few years. Bracing contracts up to about £1m. in value.—Full particulars to Box V.4752, "The Contract Journal."

THE CROFT GRANITE, BRICK AND CONCRETE CO., LTD.

Due to continuing expansion REQUIRE the following staff:—

QUALITY CONTROL ENGINEER

To be responsible for concrete mix design, routine testing of all products, and development work on new processes.

DRAUGHTSMEN

For our Croft and London offices, for detailing reconstructed stone and structural precast concrete.

ESTIMATOR

For reinforced and prestressed concrete and reconstructed stone.

SALES REPRESENTATIVE

For Birmingham area. This vacancy arises due to imminent retirement of our old senior representatives. Their vacancies are sacramental and all other excellent prospects.—Keen men who consider their experience suitable should apply, in confidence, giving details of past experience and present salary, to:

The Sales Director,
THE CROFT GRANITE, BRICK AND CONCRETE CO., LTD.,
Croft, near Leicester.

SURFACING MANAGER REQUIRED, fully experienced in tarspraying, tarpaving and tarmacadam work, with office in London and the Northern Home Counties. The post is permanent and pensionable. Applications, with full details of experience, etc., should be in writing, addressed to the Managing Director, **VAL DE TRAVERS ASPHALTE, LTD.**, 21 Old Bailey, E.C.4.

CIVIL ENGINEERING CONTRACTORS (specialists) near Stevenage, REQUIRE a MAN, aged 24-35 with 2 years' C.I.C. training in Civil Engineering, knowledge of reinforced concrete and measuring desirable. The position is permanent with good salary and bonus. Write full particulars to Box V.4775, "The Contract Journal."

APPOINTMENTS VACANT

CLASSIFIED ADVERTISEMENT RATES:

Classification	First Four Lines or Less	Each Additional Line
APPOINTMENTS VACANT	12/-	2/-
APPOINTMENTS WANTED	7/-	1/-
WORK REQUIRED BUSINESS OPPORTUNITIES, BUSINESSES FOR SALE, DIVING, FINANCE, PROFESSIONAL SERVICES, AGRICULTURE, HORTICULTURAL PROPERTY, SALE BY AUCTION, PLANT AND MISCELLANEOUS	14/-	3/-
BOX NO. 1/- EXTRA.		

EXPERIENCED CIVIL ENGINEER REQUIRED in civil engineering contractors' London office. Duties include tendering, planning, and assistance in the control of contracts. Most of the work will be concerned with major civil engineering works abroad, and some travel may well be involved.—Write Box V.4409, "The Contract Journal."

SURVEYORS

SURVEYORS, experienced in measuring work for valuation purposes, and the presenting of claims on building contract and on roads and sewer works, are REQUIRED for the Glasgow area, by **SCOTTISH SPECIAL HOUSING ASSOCIATION, LTD.** Salary scale is £735 to £1,125 per annum. Overtime is paid for and a percentage of salary may be paid as bonus. A superannuation scheme is in operation.—Apply, in writing, to:

The Labour Manager,
SCOTTISH SPECIAL HOUSING ASSOCIATION, LTD.,
19 Palmerston Place, Edinburgh, 12.

STORES MANAGER REQUIRED by Massey Ferguson agricultural and industrial distributor. Previous M.F. stores experience absolutely essential. An interesting and permanent situation with an expanding organisation.—**TRACTORS AND FARMAIDS, LTD.**, Stratton Road, Swindon, Wilts.

STEPHENSON CLARKE (P.F. ASH DEVELOPMENT), LTD.

A Powell Duffryn Company. Fly Ash—Commercial Sales Development. Have an immediate vacancy for a MAN, aged 25/40, for their north west (Manchester) organisation. Candidate should either be a civil engineer or have a background training in civil engineering self-employed experience in building/concrete/public works activities. Superannuation. Car provided. Progressive salary.—Write, in confidence, with copy references, to:

Mr. T. Kerr,
STEPHENSON CLARKE (P.F. ASH DEVELOPMENT), LTD.,
8 Great Tower Street, London, E.C.3.

GENERAL FOREMAN REQUIRED for R.C. work. Site within 50 miles London. Top salary and conditions for the right man capable of working to a profit.—Apply, in writing, to **THE CONSTRUCTION GROUP (REVERSE CHARGE)**: **BIERRUM AND PARTNERS LTD.**, 167 Imperial Drive, Harrow. Tel.: Field End 7701.

A CIVIL ENGINEER

IS REQUIRED by a leading firm of wire manufacturers for appointment as **FIELD SALES MANAGER** (pre-stressed concrete) and to be responsible for the promotion of sale of these products throughout the U.K. with visits to export markets when required. This is a responsible post and the successful applicant (who will probably be required to live in the London area) must have a good personality and the experience to discuss technical matters with senior industry, civil engineering consultants, contractors, public authorities, etc. Preference will be given to applicants holding Membership of the Institution of Civil Engineers. Previous experience on the staff of a consultant engineer is not essential. The company operates a generous non-contributory pension scheme, and a house mortgage scheme. Assistance will be given with initial removal costs. A car will be provided. Commencing salary will be in the region of £1,600 per annum, dependent upon age, qualifications and experience.—Further details of the appointment and forms of application may be obtained from:

Box No. T4400/1,
FOSTER, TURNER AND BENSON, LTD.,
11 Old Jewry, London, E.C.2.

E.B.C. AND SLEEMAN, LTD.
CONTRACTORS, EXETER, DEVON.

Men with ambition and ability will find opportunities in our expanding building team with good conditions and fair reward for hard work. We offer a hand ensures future progress for our medium-sized contracting organisation covering the South West Counties.

EXECUTIVE POSTS

In contract management, quantity surveying, estimating, contract administration and planning, site control. All executive posts can include eligibility for contributory pension scheme.

Also positions available for experienced men as **PLANT DEPARTMENT MANAGER** and **GENERAL FOREMAN/AGENTS**.

All applications (in writing) treated in strict confidence, to:

J. R. Garsworthy, Managing Director,
E.B.C. AND SLEEMAN, LTD.,
Marwood House, 60 St. Davids Hill, Exeter.

A GENTS REQUIRED, calling on builders, architects and allied trades in all areas to sell new exclusive Good commission, interview can be arranged in area.—Write Sales Manager, **PERMAFENCE, LTD.**, Beechwood Works, Taplow, near Maidenhead, Berks.

APPOINTMENTS VACANT

SITE CLERK REQUIRED to cover group of contracts, principally maintenance, under Agent. Present base Derby area, but preferably not away to begin as required. Honest, shrewd, and minimum of three years' experience, including daily progress calculations. ERIC JOHNSON, STUBBS AND CO., LTD., Woodchurch Lane, Birkenhead.

CIVIL ENGINEER

REQUIRED for certificate and planning duties on large overseas civil engineering project. Applicants must have wide experience of large-scale projects with contractors.—Write full particulars of career to:

BOX V.4682, "THE CONTRACT JOURNAL."

BUILDERS' MEASURING SURVEYORS REQUIRED in office of progressive Hertfordshire contractors.—Write, in confidence, giving full particulars, to Box V.4794, "The Contract Journal."

FOREMAN PLANT FITTER REQUIRED for contractors' plant yard in South Lancashire, with opportunity to become Plant Manager. Must be fully experienced in main depot repair works and able to control fitting staff with interest.—Write Box V.4793, "The Contract Journal."

MASON/PAVIR REQUIRED for paving and kerb laying, and some sub-contract work.—Apply: **STANLEY LUCAS (SLOUGH), LTD.**, Alexandra Road, Slough, Bucks. Telephone: Slough 21279.

TIMEKEEPER/SITE CLERK REQUIRED for civil engineering contracts, Lancashire and Monmouthshire. Good prospects and permanent offered to suitable applicant.—Applications, stating full particulars, to Box V.4791, "The Contract Journal."

For Advertisements received too late for classification see page 1169

APPOINTMENTS WANTED

ASPHALT CONTRACTS MANAGER, 25 years' experience, SEEKS POST where initiative and results will be rewarded.—Write Box W.4713, "The Contract Journal."

A GENT DESIRES CHANGE, 25 years in trade, experience in road and sewer construction, particularly in London area.—Write Box W.4736, "The Contract Journal."

CIVIL ENGINEER, qualified, early fifties, with long and varied executive experience, SEEKS POSITION in medium-sized or expanding firm, South of England. Investment if possible after trial period.—Write Box W.4762, "The Contract Journal."

A GENT well experienced, present contract finishing authority, SEEKS NEW POST in charge of contract or control of contracts within reasonable radius. Mobile, own car.—Write Box W.4757, "The Contract Journal."

A GENT available shortly, thoroughly experienced, SEEKS NEW POSITION, mobile, but with excellent following in Bristol/Cheltenham area.—Write Box W.4758, "The Contract Journal."

ENGINEER (33), qualified, SEEKS SENIOR POSITION at home or abroad. Previous experience as second-in-charge of major overseas contracting company. Available immediately.—Write Box W.4730, "The Contract Journal."

AREA AGENT/SENIOR AGENT, aged 45, SEEKS SIMILAR POST, Craft or University trained. Fully experienced in all branches of building and civil engineering industry. Available immediately.—Write Box W.4730, "The Contract Journal."

CHIEF BUYER, experienced purchasing all materials, plant, etc., building, civil engineering and refinery projects, home and overseas. SEEKS POSITION responsible authority with busy company.—Write Box W.4758, "The Contract Journal."

PLANT MANAGER, aged 48, SEEKS CHANGE. Comprehensive knowledge of all building and civil engineering plant. vast experience, drive and ability.—Write Box W.4799, "The Contract Journal."

WORK REQUIRED

WANTED, HIRE OR CONTRACT WORK for modern fleet of Caterpillar 631 Motor Scrapers, D9s, D8s, 15 cu. yd. Rear Dump Euclids and 38R Face-shovel.—Apply: **BRODERICK AND RYAN, LTD.**, 421 Nottingham Road, Ilkeston, Derby. Tel. 4381/2/3.

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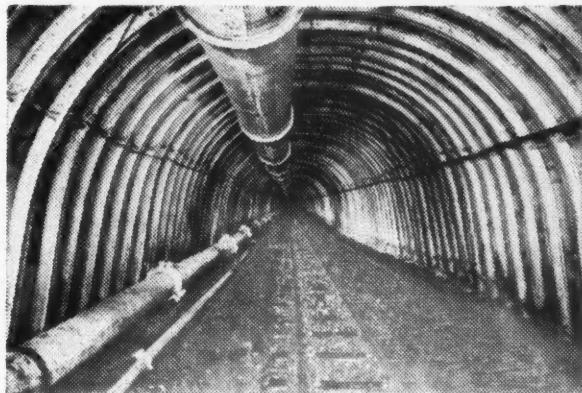
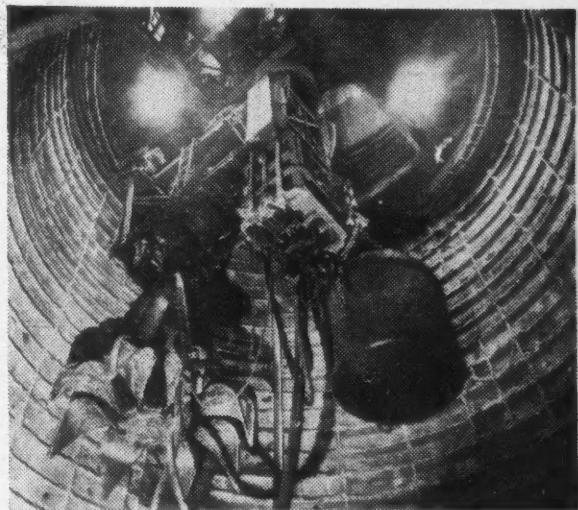
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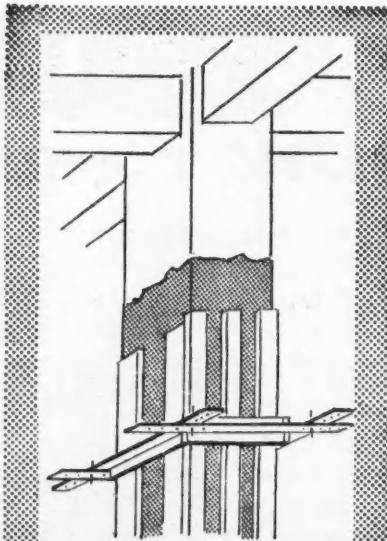
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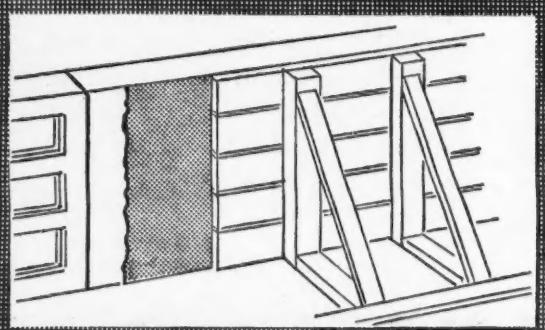
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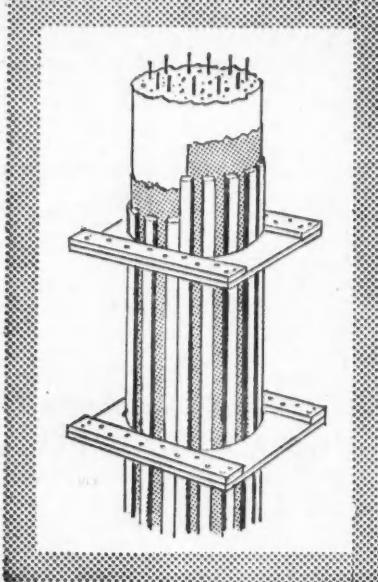
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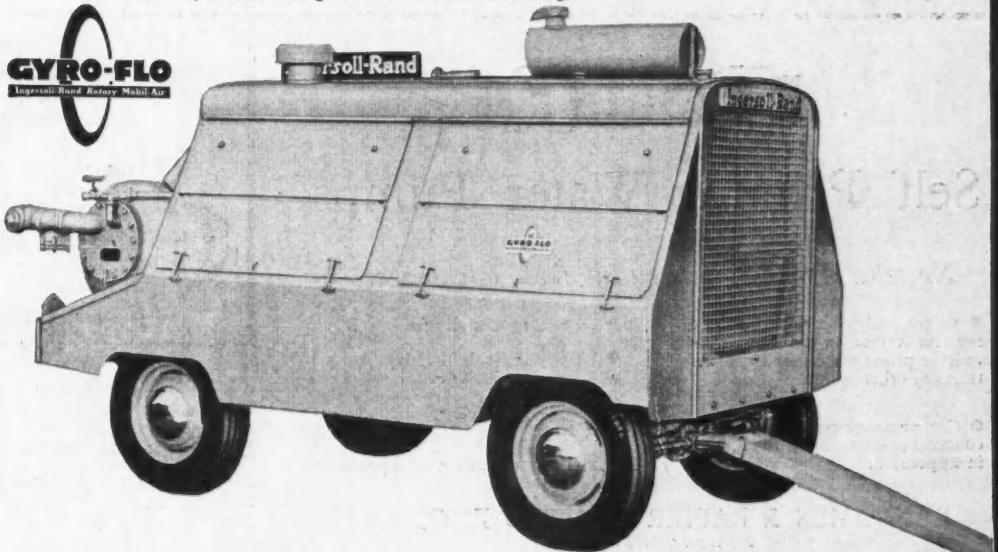
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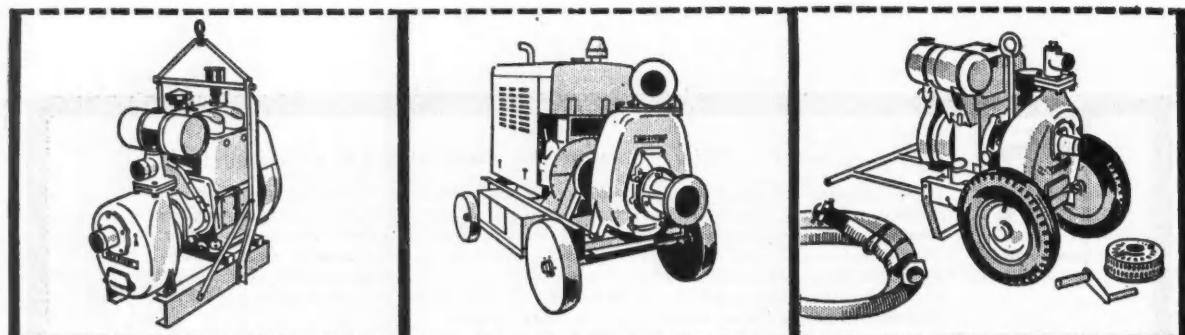


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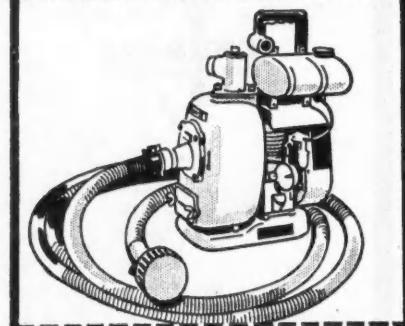
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BOROUGH OF ILFORD.

RECONSTRUCTION OF REDBRIDGE LANE (PART)—FAIRMOOR GARDENS TO WOODFORD AVENUE.

The CORPORATION invites TENDERS for the RECONSTRUCTION of approx. 6,500 sq. yd. of existing CARRIAGeway with 8in. Reinforced Concrete on a 6in. Hardcore Sub-base, the Taking Up and Re-laying of approx. 1,500 lin. yd. of Granite Kerbing and approx. 3,200 sq. yd. of Paving, together with ancillary works.

Conditions of Contract and Drawings may be inspected upon application to the Borough Engineer, Town Hall, Ilford, from whom the Special Conditions, Specification, Bills of Quantities and Form of Tender may be obtained by payment of deposit of Two Guineas which is returnable upon receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, in plain sealed envelopes bearing no name or mark indicating the tenderer, and endorsed "Tender for Reconstruction of Redbridge Lane (Part)" must be delivered to the TOWN CLERK, Town Hall, Ilford, not later than 4 p.m. on the 26th SEPTEMBER, 1961.

The Corporation does not bind itself to accept the lowest or any tender.

BOROUGH OF ILFORD.

RECONSTRUCTION OF LONGBRIDGE ROAD (PART)—GOODMAYES LANE TO BECONTREE AVENUE.

The CORPORATION invites TENDERS for the RECONSTRUCTION of approx. 3,000 sq. yd. of existing CARRIAGeway in 10in. Reinforced Concrete on a Hardcore Sub-base, the Taking Up and Re-laying of approx. 1,000 lin. yd. of Kerbing and approx. 750 sq. yd. of Paving, together with Drainage and other ancillary works.

The Conditions of Contract and Drawings may be inspected, and the Special Conditions, Specification, Bill of Quantities, general layout drawings and Form of Tender obtained by application to the Borough Engineer and Surveyor, Town Hall, Ilford.

Applications must be accompanied by a deposit of Two Guineas, which is returnable upon receipt of a bona-fide Tender, not subsequently withdrawn.

Sealed Tenders, in an envelope which will be provided, bearing no indication of the tenderer, and endorsed "Tender for Reconstruction of Longbridge Road (Part)—North Carrigeway, Goodmays Lane to Becontree Avenue," must be delivered to the TOWN CLERK, Town Hall, Ilford, not later than FRIDAY 26th September, 1961.

The Corporation does not bind itself to accept the lowest or any tender.

BOROUGH OF SLOUGH.

PROPOSED CREMATORIUM.

FIXED-PRICE TENDERS are invited for the SUPPLY and FIXING of the ELECTRICAL INSTALLATION to the Council's proposed CREMATORIUM at STOKE PLACE. The work will include the Provision of Underfloor Heating.

Electrical Contractors who wish to Tender for this work, should not later than Noon, 19th SEPTEMBER, 1961, so inform the Borough Engineer, Town Hall, Slough, Bucks, who will thereupon supply the appropriate documents.

It is anticipated that building operations will commence at the end of 1961 and will be completed in the latter part of 1963.

Documents will be sent to applicants on 27th SEPTEMBER, 1961 and Tenders must be received by the TOWN CLERK, Town Hall, Slough, not later than Noon, 13th OCTOBER, 1961.

WIMBORNE AND CRANBORNE RURAL DISTRICT COUNCIL.

COLEHILL, PAMPILL AND HAMPRESTON (PARTS OF) SEWERAGE SCHEME, PILFORD AREA.

CONTRACT 9

FIXED-PRICE TENDERS are invited for the LAYING of approx. 3½ miles of 6in. SEWERS with Flexible Joints, Manholes, 140 House Connections, One Pumping Station and 780yd. of Rising Main.

Documents available from the Surveyor on payment of Five Guineas, returnable upon receipt of all documents and a bona-fide Tender not subsequently withdrawn.

Sealed Tenders to be forwarded to the undersigned by Noon, 16th OCTOBER.

R. H. K. WICKHAM,
Clerk to the Council.

Furzehill,
Wimborne,
Dorset.

1st September, 1961.

CITY OF OXFORD.

For SALE, One 7-panel D.C. Vertical Flat Back Type SWITCHBOARD, suitable for use on 220-Volt 2-wire SYSTEM. Including four General Panels and three Feeder Panels with appropriate Switches, Circuit Breakers and Meters. For further details and permission to view apply to the CITY WATER ENGINEER, Denton House, Ifley Turn, Oxford.

YOUNG MAN REQUIRED as ASSISTANT to Manager of the contractors' tools division of a large sectional building manufacturers. Some experience in this field an advantage. Excellent prospects and salary to the right man.—Apply, in strictest confidence, to the Managing Director, HARDURN AND SONS, LTD., Horton Road, West Drayton, Middlesex.

MANAGER REQUIRED to take complete control of contracts department, building and civil engineering firm, specializing in design and erection of precast concrete. Head office in Home Counties. Organizing ability essential.—Write, stating qualifications, age, previous experience and salaries earned, Box V.4792, "The Contract Journal."

SURFACING SUPERVISORS REQUIRED for Barber-Greene and hand works.—Write, giving age, experience and salary required, to Mr. C. E. Hunt, WILLIAM PRESTWICH AND SONS, LTD., Tudor House, Bridge Street, Walsall.

BARBER-GREENE DRIVERS, fully experienced, **URGENTLY REQUIRED** for work in Midlands area. Applications please apply to Roads Department, AMALGAMATED ASPHALTE COMPANIES, LTD., Moor Lane, Witton, Birmingham, 6. Birchfields 5831.

BARBER-GREENE SCREWMENTS, fully experienced, **URGENTLY REQUIRED** for work in Midlands area. Applicants please apply to Roads Department, AMALGAMATED ASPHALTE COMPANIES, LTD., Moor Lane, Witton, Birmingham, 6. Birchfields 5831.

SCAFFOLDING GENERAL MANAGER REQUIRED by expanding London company. Applicant must be fully experienced and able to take complete control of contracts and plant hire. Write Box V.4790, "The Contract Journal."

BOROUGH OF BARNSTAPLE.

EAST PILTON SEWERAGE SCHEME PART III.

TENDERS are invited for the LAYING of approx. 60 lin. yd. of 12in. CONCRETE TUBE, 400 lin. yd. of 6in. GLAZED STONEWARE PIPE, 300 lin. yd. of 9in. GLAZED STONEWARE PIPE, and 12 MANHOLES. Specification, Bills of Quantities and Drawings may be obtained from the Borough Surveyor, The Castle, Barnstaple, on payment of a deposit of £2 2s., which will be refunded on receipt of a bona-fide tender, not subsequently withdrawn, and the return of all documents supplied.

Tenders, in plain sealed envelopes endorsed "East Pilton Sewer" to be sent to the Borough Surveyor at the above address by 9 a.m. on WEDNESDAY, the 27th September, 1961.

The Council does not bind itself to accept the lowest or any tender.

F. J. BROAD,
Town Clerk.

The Castle, Barnstaple.
4th September, 1961.

ROTHWELL (YORKS.) URBAN DISTRICT COUNCIL.

LEEDS HILL SERVICE ROAD.

The Council propose to invite TENDERS on a Fixed-prices Basis from suitably experienced Contractors for the CONSTRUCTION of a SERVICE ROAD and FOOT-PATH at LEEDS HILL, the total length being about 350yds.

Contractors wishing to Tender should submit their names and details of their experience to A. D. W. DUNN, Town Engineer and Surveyor, Civic Buildings, Rothwell, near Leeds, not later than FRIDAY the 15th September, 1961.

ALLEN T. S. ROBERTSON,
Clerk of the Council.

Civic Buildings,
Rothwell,
Near Leeds,
Sept. 1961.

CALNE AND CHIPPENHAM RURAL DISTRICT COUNCIL.

DERRY HILL SEWERAGE.

TENDERS are invited for LAYING approx. 7,500yds. of 6in. SEWERS with incidental works at DERRY HILL, near Chippingham.

Copies of the contract documents can be obtained from the Engineer to the Council at the address below, against a deposit of Two Guineas, refundable on receipt of a bona-fide Tender not subsequently withdrawn.

Tenders, sealed in the envelopes provided, are to be delivered to the undersigned by Noon, 7th SEPTEMBER, 1961. The Council does not bind itself to accept the lowest or any tender.

H. F. HALES,
Clerk of the Council.

Bewley House,
Marshfield Road,
Chippingham.

AMESBURY RURAL DISTRICT COUNCIL.

REGIONAL WATER SUPPLY—CONTRACT NO. 13.

TOTTERDOWN LINK MAIN.

TENDERS are invited from experienced public works contractors for the LAYING of approx. 13¾ miles of 9in. dia. Spun-Iron WATER MAINS and incidental works.

Conditions of Contract, Specification, Form of Tender and Bills of Quantities may be obtained from the Council's Consulting Engineers, Messrs. Lemon and Bizard, Teiford House, Hulse Road, Southampton, upon payment of a deposit of £3 3s., made out to the Rural District Council, who will be responsible for the receipt of a bona-fide Tender and the return of all documents.

The Contract Drawings may be inspected at the Council Offices or at the offices of the Consulting Engineers.

Tenders and priced Bills of Quantities on the form supplied should be delivered to me in a plain sealed envelope endorsed "Tender—Regional Water Supply—Contract No. 13—Totterdown Link Main" before Noon on 27th SEPTEMBER, 1961.

The Council do not bind themselves to accept the lowest or any tender.

E. M. NOTTAGE,
Clerk to the Council.

Amesbury Rural District Council,
Redworth House,
Amesbury,
Wiltshire.

25th August, 1961.

EXPERIENCED COST CLERK REQUIRED

for civil engineering contractors' office. Must be fully conversant with aspects of C.E. costings systems. Salary by arrangement. Bonus and pension schemes in operation. Write in first instance to the Secretary, SCOTT HALE (CONTRACTORS), LTD., Globe Road, Hornchurch, Essex.

GENERAL FOREMAN, with experience on deep sewers and headings, REQUIRED for long contract in mid-Cheshire. A first-class man is required who will have the opportunity of further advancement, and will be based permanently in that area. Pension scheme and bonus sharing scheme in operation.—Application and further details from Director, HENRY BOOT AND SONS (CIVIL ENGINEERING), LTD., Banner Cross Hall, Sheffield, 11, quoting Ref. GF/C.

VACANCIES exist for **JUNIOR** and **SENIOR CIVIL AND STRUCTURAL ENGINEERS** in our London office. Preference will be given to applicants who have had both site and office experience. Excellent working conditions with free progression opportunities. For further details and application form, please apply in confidence to the Secretary, **INDUSTRIAL AND ENGINEERING CONSULTANTS, LTD.**, 33 Bruton Street, London, W.1.

CIVIL ENGINEERING GENERAL FOREMAN. Applications are invited from foremen experienced in modern motorway construction techniques and with a good record of drill and initiative. Good prospects of advancement and commensurate salary are offered together with participation in bonus and pension schemes.—Write, giving details in confidence, previous experience, salary and when free to communicate work to Box V.4788, "The Contract Journal."

CIVIL ENGINEERS with at least three years' site experience, WANTED for road and bridge works in Southern England. Attractive openings for Engineers and Assistant Engineers. Permanent positions offering good salaries, bonuses and allowances.—Write, giving details of career, to Personnel Administrator, THE CEMENTATION CO., LTD., 20 Albert Embankment, London, S.E.1.

BOROUGH OF COLNE.

82 FLATS AND 12 HOUSES.

COMPREHENSIVE TENDERS on a fixed-price basis are invited for the ERECTION COMPLETE, including all fittings, of 82 FLATS and 12 HOUSES at LOE COMMON, Colne. Tenders for individual trades will not be accepted.

Specification, Bill of Quantities and Form of Tender may be obtained from the Borough Engineer and Surveyor, Town Hall, Colne, Lancs., on payment of Two guineas refundable on receipt of bona-fide Tender and returning all documents. Plans and General Conditions of Contract may be inspected at the Borough Engineer's Office.

Tenders, in plain sealed envelopes, endorsed "Housing Scheme No. 37," to be delivered to me at the Town Hall not later than First Post, TUESDAY, 26th September.

A. HAIGH,
Town Clerk.

BISHOP'S STORTFORD URBAN DISTRICT COUNCIL.

TENDERS are invited for SURFACING the ROOFS of OUTBUILDINGS of certain Council HOUSES in Bishop's Stortford with ASPHALT. Details, together with Specification and Form of Tender, can be obtained on application to the Council's Engineer and Surveyor. The Council does not undertake to accept the lowest or any Tender, which must be received by the undersigned by SATURDAY, the 30th September.

Council House,
Causeway,
Bishop's Stortford,
4th September, 1961.

CITY OF MANCHESTER.

For DISPOSAL, Two Ford TOWER WAGONS (purchased in 1953). Tender Forms, returnable by 19th SEPTEMBER, 1961, to the CITY SURVEYOR, Town Hall, Manchester, 2.

THORNEY DRAINAGE BOARD.

10ft. DIESEL DRAGLINE EXCAVATOR, NO. 16127, FOR SALE.

The Board have for DISPOSAL the ABOVE MACHINE, purchased from Ruston-Bucyrus, Ltd., in 1953, equipped with a 28ft. Boom and a 3 cu. yd. bucket.

The machine is in good working order and may be inspected, by arrangement, working at Thorney.

Tenders, enclosed in sealed envelopes, and endorsed "Tender for 10ft." must be received not later than SEPTEMBER 25th.

The Board do not bind themselves to accept the highest or any tender.

HUGH SWANN,
Clerk to the Thorney Drainage Board.
Drainage Office,
Thorney,
Norfolk Peterborough.
Telephone: Thorney 333.
4th September, 1961.

MECHANICAL ENGINEER

by iron and steel company, in West Africa. Applicant should possess professional qualifications and have experience in implementing preventive maintenance schemes in particular related to heavy earthmoving equipment and general mechanical plant. Experience with static methods an advantage. Salary £2,400 per annum, plus gratuity and bonuses. Marriage allowance of £10 per month and £5 per month for each child under 18. Contributory pension scheme with retirement age 55. Dependant's income scheme and free life assurance. Tour of duty approx. 15 months, with guaranteed leave in U.K. Return passage paid. Initial kit allowance. Free furnished accommodation and medical attention.—Write giving full details of experience, stating age, married or single, to: SIERRA LEONE DEVELOPMENT CO., LTD., Dept. ME-32, City Gate House, Finsbury Square, London, E.C.2.

CIVIL ENGINEERS. — SECTION and JUNIOR ENGINEERS and CIVIL ENGINEERING INSPECTOR REQUIRED in connection with heavy civil engineering work in the lower Trent Valley. Application by letter in the first instance quoting Reference SAR, should be sent to MERZ AND MCLELLAN, Cartiloh House, Newcastle upon Tyne, 1.

GENERAL FOREMAN REQUIRED

civil engineering work, Potteries area.—Apply: PERCY BILTON, LTD., Stone Staffs, Telephone: Stone 467 and 281.

YOUNG experienced ESTIMATOR REQUIRED for South West Lancashire. Salary commensurate with experience.—Please send full details of experience to Box V.4812, "The Contract Journal."

PERSONAL ASSISTANT.—Applications are invited from suitably qualified persons for the position of Personal Assistant to the General Manager of a sports ground construction company. The post carries a salary of £1,000 per annum and a vehicle will be provided, if required.—Replies, stating particulars and qualification, to Box V.4813, "The Contract Journal."

GENT REQUIRED in roadworks in London area. Appointment eligible for superannuation scheme after satisfactory service.—Apply: WILLIAM QLD., LTD., North Harrow, Middlesex.

YOUNG SITE ENGINEER to assist in setting out, urgently REQUIRED for a contract in the Salisbury area. Ability to use instruments essential. Progressive position for suitable candidate.—Apply, giving details of experience, age, salary grade, etc., to General Manager, MEARS BROS. (CONTRACTORS), LTD., 8 Sydenham Road, S.E.26.

FINEST OPPORTUNITY for young energetic ENGINEER experienced with road and reinforced R.C. works, as P.A. to Managing Director of young C.E. company. Knowledge of C.E. organisation in and outside head office essential.—Write, stating age, experience, salary, Box V.4804, "The Contract Journal."

ASSISTANT TECHNICAL SALES REPRESENTATIVE for quarry industry, age 25-32, for West Midlands area. Sound education in general subjects, driving licence.—Reply, giving full particulars, in confidence, to Box V.4800, "The Contract Journal."

BUILDING MANAGER REQUIRED for national company of building and civil engineering contractors. This is a new appointment for the northern area due to expansion of building activities in this area. The position is for a man with energy and enthusiasm, in the age group 30-40, who is experienced in the erection of houses, flats and the smaller industrial buildings, must be capable of assessing own qualities and controlling labour. The position is a permanent one, with an offer of good start and career allowance.—Reply, in confidence, with full details of experience, present position and salary, to Box V.4806, "The Contract Journal."

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THE
CONTRACT JOURNAL
INCORPORATING
THE BRITISH CONSTRUCTIONAL ENGINEER AND THE CONTRACTOR

THE CONTRACT JOURNAL
incorporating
THE BRITISH CONSTRUCTIONAL ENGINEER
and
THE CONTRACTOR
Established 1879

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LAWRENCE McCARTHY

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Advertisements

Advertisement rates may be obtained on application to R. Binfield, Advertisement Manager.

TOWARDS GREATER SAFETY

SINCE October 1, 1948, safety on building operations has been governed by the Building (Safety, Health and Welfare) Regulations. These regulations have been twice amended. First, from November 1952, the requirement as to the safe load and operation of mechanical transport on site was modified. Second, certain of the provisions relating to cranes and lifting appliances were the subject of amendment regulations from the beginning of 1959.

Now the days of the Building Regulations are numbered. They are to be superseded by the new Construction Regulations which are being made law piecemeal in order to bring them into effect at the earliest opportunity. And these new Construction Regulations will apply not only to building operations but also to works of engineering construction, the definition of which has been extended to repair previous deficiencies. They will thus bring into effect a unified safety code applying to all building and civil engineering operations. As regards content, they will combine, with certain amendments, the existing building regulations and the draft engineering construction regulations produced in 1951 when the intention, since abandoned, was that there should be separate regulations for works of engineering construction.

The first two sets of the new Construction Regulations have just been published. Differences of opinion about them between the unions and the employers have been ironed out by a public enquiry held earlier this year, the report of which has also just been published. Both sets of the new Construction Regulations will come into effect on March 1, 1962.

The Construction (Lifting Operations) Regulations will supersede the existing provisions in the Building Regulations as amended in 1959. Sensibly the need to test mobile cranes every time they are moved has been withdrawn, but apart from detailed changes as these there are no differences in principle from the existing law.

The new Construction (General Provisions) Regulations are more fundamental. They will for the first time lay down detailed safety requirements for such civil engineering operations as tunnels, cofferdams and caissons. They will in addition extend certain provisions already in the Building Regulations. For example, the size of firm required to appoint a safety supervisor (not necessarily full-time) will be reduced from 50 men to 20 men. There will be an entirely new provision prohibiting the manual carrying or moving of excessive loads. And the transport section will be extended to cover locos.

Perhaps most significant, for this was the main spring of the public enquiry, will be the "escape clause" which exempts the employer from liability in respect of matters proved to have been due to physical conditions over which he had no control and against the happening of which it was not reasonably practicable for him to make provision. It was originally proposed that this escape clause should be of general application but it will, in fact, be confined to certain operations purely of a civil engineering character where actual hazards are likely to be encountered, viz., excavations, shafts and tunnels, cofferdams and caissons, and to the ventilation of such working places.

As from March 1, 1962, these two new sets of Construction Regulations will apply to all construction work both building and civil engineering, but those parts of the existing Building Regulations not superseded by them will continue to apply to "building operations." At a later date the remaining sections of the Building Regulations will be superseded by two further sets of Construction Regulations which will deal respectively with safety of working places and means of access, and with health and welfare. At that stage it would seem desirable that the separate sets of Construction Regulations should be amalgamated into one code which would presumably also include the Diving Regulations and the Work in Compressed Air Regulations, both of which are already in operation. And as if the situation were not already complicated enough it must be remembered that there are other legislative requirements that must be complied with, notably the Electricity Regulations, the Woodworking Machinery Regulations and the Petroleum Regulations. Finally, opencast coal operations are outside the definition of works of engineering construction and are governed by the Mines and Quarries legislation.



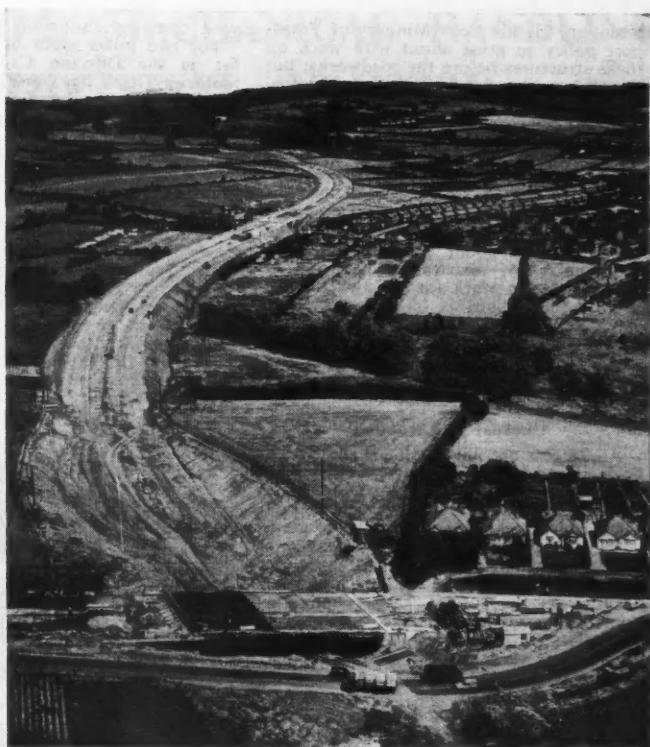
Whittington Junction



Norton Viaduct

**BRIDGEWORKS
NEARING COMPLETION
ON THE M.5**

**Progress of £8m. Northern
Section Contract**



Where the Motorway will pass beneath the A.491

THE 27½-mile northern section of the Birmingham-Bristol Motorway (M.5), running from the southern outskirts of Birmingham to near Tewkesbury, has now been under construction for just over a year.

Bad weather last year held up work for

some months, and there is still a good deal of leeway to make up. Nevertheless, it is hoped to complete the contract next summer.

The M.5 will run from Lydiate Ash, near Birmingham, in a southerly direction to Warndon and Whittington, east of

Worcester; then south to Strensham, where it turns south-east to join an extension of the Ross Motorway from the M.50 eastern terminal at Brockridge Common.

At present, the most advanced works are those on bridges and flyovers. There are 58 of these in various stages of con-



Warndon Junction

struction. It has been Ministry of Transport policy to press ahead with work on these structures before the roadworks; but something like five miles of the actual motorway has been completed except for final surfacing, while excavations for the remainder are nearly complete. A particular feature of the work so far has been constantly changing designs based on experience gained from the M.1 project.

At the northern end of the new motorway at Lydiate Ash, there will be a large two-level roundabout junction with the A.38 and A.459. Excavations have started and foundation work for the two bridges of this roundabout is in progress. Just south of this, the Wildmoor Lane Bridge, carrying the motorway over a lane, is finished, and gives a good view of the road curving eastwards towards its present finishing point.

Unusual Construction

Abutments are now built for the Stourbridge Road Bridge; and almost completed is the Rocky Lane Bridge, carrying a lane over the motorway on a single concrete span, which was built in unusual fashion.

The stone-faced concrete abutments were built first, sunk into the ground. After the bridge deck had been cast in position on the surface, the ground was tunnelled away underneath to a depth of about 20ft. for the motorway to pass below in a cutting through marl and sandstone.

The A.448 Kidderminster - Bromsgrove road is crossed by a prestressed concrete single-span bridge with brick-faced abutments, approached by 20ft. high embankments, which is now nearing completion. A small bridge at Upton Warren will take local traffic over the motorway, while the single-span Crown Lane Bridge takes the motorway over the lane and the small river Salwarpe.

Though still incomplete, the three-span steel girder Rashwood Junction Bridge, over the A.38 (Birmingham-Worcester) Road, is now crossed daily by scores of lorries, hauling some 100,000 cu. yd. of marl from the Impney Farm borrowpits for use in the road construction works between Rashwood and Crown Lane.

Deck concreting has been done on the Hanbury Road Bridge, a single-span prestressed concrete structure over the Droitwich-Alcester Road, now about 90 per cent. complete; and work is well ahead on the Primsland End Bridge, of steel girders

with concrete abutments and slab deck.

For two miles south of Clink Gate, as far as the Offerton Canal Bridge, the motorway itself has been constructed and only awaits its final surface.

30ft. Cuttings

One of the most picturesque sections of the motorway is near Warndon Junction, where the road will pass, in cuttings some 30ft. deep in pleasantly wooded surround-

Construction work on bridges near here, such as those at Trotshill Lane and Crowle Lane and that carrying the A.442 Worcester-Alcester road, is well advanced, as are the twin-span concrete bridgeworks for the two-level interchange at the major junction with A.44 at Whittington.

Just south of this, Norton Viaduct carries the motorway across a minor road and the Worcester-Gloucester railway. It



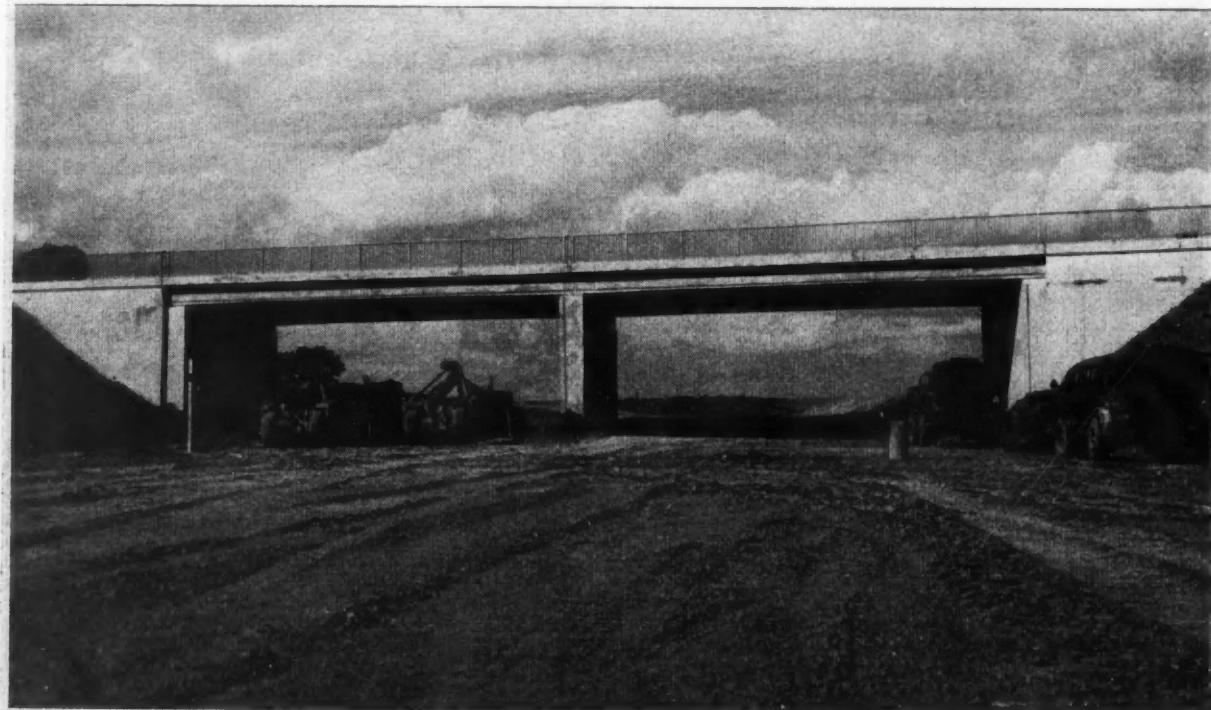
Baughton Bridge

ings, beneath a large circular roundabout from which three smaller roads branch off. The junction is with B.4084, but from this roundabout also will start the proposed Worcester Northern Link, a road designed to join up with the A.449 to give a by-pass of Worcester's crowded centre. The two bridges here, forming part of the roundabout, are practically ready.

has four spans in prestressed concrete beams on brick-faced abutments and piers.

Midland motorists who visit Kempsey Common, a local beauty spot, in considerable numbers at weekends will have access over the motorway by the Farmers Arms Bridge, a single span with brick-faced abutments.

(Concluded on page 1189)



Whittington Bridge

APPLICATION OF MOBILE MECHANICAL HANDLING EQUIPMENT IN THE STEEL INDUSTRY

by N. W. G. Dolling and A. J. Harby*

MOST if not all steelworks nowadays engage in some form of free-moving equipment for the handling of raw materials and waste products or to provide engineering services.

The degree to which they are applied and the economics obtained obviously depend very largely on the undertaking concerned. For that reason no attempt has been made to refer to operational costs in this Paper.

On the other hand, the method of application of certain machines and projects would probably benefit by dissemination and discussion, and a description of some of the systems employed or investigated by The Steel Company of Wales is therefore given in the following paragraphs together with observations on future development where applicable.

Abbey Melting Shop: Operations

This melting shop consists of eight 200-ton and four 230-ton open hearth fixed oil-fired furnaces. Under the current expansion scheme three of the existing furnaces will be converted to Maerz Boelens design of 400-ton capacity during this year and a fourth is scheduled for 1962.

Until late 1954 the practice with slag removal operations in this shop was to leave a slab in the bottom of an empty pocket which was extracted at the end of the furnace campaign, by means of a 300-ton casting bay overhead crane. This had the effect of breaking up the slag which was then removed by hand labour using pneumatic jack hammers, and assisted by $1\frac{1}{4}$ cu. yd. overthrew mechanical shovels.

The shovels were also used to load the material into rail wagons but the degree to which they could be usefully employed in the pockets was often severely limited by the poor slag break-up.

In these operations the wicket wall was removed about five shifts after oil-off and four men in each pocket were then used for about three shifts to remove the brick debris, which had been dropped from the furnace top through the uptakes.

The sand walls were then removed prior to the slab insert being extracted after which, a team of four men working in each pocket took about six to eight shifts to remove the remaining slag. This work was long and hazardous and extremely costly in man-hours and incentive payments.

In November of that year, experiments were carried out in blasting the slag and using $2\frac{1}{2}$ cu. yd. overthrew mechanical shovels to remove the material from the pockets and load it into 15-ton road dumper. Blasting took place about eight hours after oil-off and the machine entered the pockets 16 hours after blasting.

The time taken to remove the slag with this new method varied considerably according to the length of the furnace campaign and the success of the blasting. At about 26 weeks slag age and reasonable fragmentation, however, an average time for clearing both pockets with a shovel working in each was about 24 to 30 hours.

This method continued with minor adjustments and modifications in blasting technique until mid-1958 when it was

decided to replace the overthrew shovels by front loading machines of similar capacity. This was mainly due to inherent mechanical and operational weaknesses in the former and the damage caused to the dumper by their overthrew action.

The two front loading shovels have since proved to be most successful on this work and in consequence of this, a considerably improved blasting technique, slag clearance from both pockets now takes about 6 to 8 hours.

Slag pocket operations take place about once every 10 days, between which the machines are used by the furnace engineers and casting bay departments for carriage-way clearance and general casting bay and mixer bay housekeeping.

In April of this year the first of the 400-ton Maerz Boelens furnaces is due to come into service and the flushed slag from this will be run directly on to the carriage-way floor.

It is intended to use the shovels already employed in the melting shop to load the slag into trailers drawn by agricultural type tractors. These tractors and trailers have been selected instead of conventional lorries or dumper, owing to their low loading height and excellent manoeuvrability, both of which are necessary for operating in the valve arch area.

Abbey Melting Shop: Maintenance

No particular maintenance problems have been found on the shovels other than accelerated bucket lip and track pad wear. Heavy duty track pads have no operational advantages and experiments carried out using these led to transmission failures. This appeared to be due to the fact that track spin, which normally dissipates transmission shock and overload, could not take place owing to the increased ground grip provided by the heavy duty design.

In the case of the bucket lips it has been found advisable to replace the original cutting edge with a 4in. manganese steel strip which is then lipped and ribbed with stellite welds.

After initial wear the bucket teeth are reinforced by using a "V" at the cutting edge made up from scrap road spring leaves. These are welded to the teeth with stellite and then lipped and ribbed in the same way as the buckets.

At melting shop stage level the ground charger and scrap bogie track layout do not lend themselves to the use of a machine such as a Gradall hydraulic extending boom excavator for brickwork demolition and debris removal. As a result a charger crane is used for demolition and the debris is then removed into skips by hand labour.

This latter method is most unsatisfactory and experiments in debris removal have been carried out using a small bulldozer operating in the furnace bath, and a winch-powered dragline scraper operated from the port ends.

Neither machine provided a really satisfactory solution to the problem, as the bulldozer and its operator suffered from heat, and installation difficulties discouraged the adoption of the dragline scraper.

In the Maerz Boelens furnaces the need for demolishing brickwork in situ will not arise to the same degree as in conventional furnaces due to their sectionalised construction. Thus the use of hand labour for removing debris from the furnace bath will be greatly reduced.

In view of the urgent need to eliminate hand labour for this work investigations will shortly recommence on the remaining conventional furnaces, in the use of a Gradall, for felling the brickwork and removing debris.

Port Talbot Melting Shop: Operations

This melting shop has six 100-ton open hearth fixed furnaces fixed by oil or pitch creosote.

Until mid-1955 furnace brickwork demolition and slag removal was carried out by hand labour using crowbars, etc. The charger machine in this shop could not be used owing to its electric overhead travelling. Fourteen men per shift for four shifts were employed on this work with the men entering the furnace bath about 24 hours after oil-off.

In the case of slag pocket operations a 12-week furnace life produced about 5ft. of slag and this was broken up by hand labour using pneumatic jack hammers. Five men were required in each pocket for about three continuous shifts to remove all the material. The men commenced work about 36 hours after oil-off during which time the pockets had been flooded with water and then drained off.

In September, 1955 Gradalls were introduced for felling the furnace brickwork at stage level and removing debris. The machine commenced work eight hours after oil-off and the debris was removed in about 10 hours.

Shortly after the first experiments with this machine it was decided that it would be advantageous to use a small rubber-tired shovel to pick up the debris from the stage floor. This combination of Gradall and shovel has since almost entirely eliminated the use of hand labour on these operations.

A further development since the introduction of basic roofs has been the use of a Gradall operating with a hook attachment, to remove the metal roof hangers. This takes about two to three hours.

At the same time as the mechanisation of brickwork demolition took place, the blasting techniques used in the slag pockets at Abbey was extended to Port Talbot.

As obstructions in front of the pockets prevented the use of a shovel for direct loading, the Gradall had to be employed. Due to its slow rate of loading, however, it was found to be more efficient and economical to use the Gradall to remove the slag from the pocket and a shovel to load it into road dumper.

In order to speed up pocket operations the entrances to furnace pockets have since been modified to enable a $1\frac{1}{4}$ cu. yd. front loading shovel to do direct loading. As a result the Gradall is now only used in the removal of brick debris from the top of the slag during intermediate repairs.

It is interesting to note that furnace campaign life has now been extended to 20-26 weeks giving a slag level in the pockets of about 10ft. to 15ft. This is removed from both pockets by one shovel in about 60 hours, whereas, under the old system it would have taken five men per shift in each pocket about 10 consecutive shifts to complete the work.

Margam Melting Shop: Operations

Margam melting shop also consists of six 100-ton open hearth fixed furnaces but these are fired by pitch creosote and coke oven gas.

Furnace demolition and slag operations are much the same as at Port Talbot except that stanchions in front of the furnace pockets prevent the direct use of a shovel. The Gradall is therefore used for slag removal from the pockets, with a shovel doing the actual loading as previously described.

Margam Melting Shop: Maintenance

Maintenance problems on the shovels have been the same as those at Abbey Melting Shop. In the case of the Gradall,

*Extracts from Paper, "The Development of Free-moving Mechanical Handling Equipment and Vehicles, and their Application in the Steel Industry," presented at the International Works Transport Conference, held recently in Milan. Mr. Dolling is manager, stores, mobile plant, and plant and vehicle workshop, and Mr. Harby divisional traffic manager, The Steel Company of Wales, Ltd.

extensive modifications to the boom and hydraulic pipe layout have had to be carried out in order to allow the machine to operate in the heat and conditions encountered without suffering undue damage. These modifications have been generally adopted by other steel works using these machines throughout the world.

Other innovations on the Gradall have been the designing of a special set of tools for demolition work and the fabrication of a universal tool holder which allows the rapid interchange of these equipments without the use of spanners.

Coal Stocking

Up to 1949 only 54 coke ovens were in use and the necessity of holding ground stocks of coal against short falls in supply did not arise as coal required against miners' holidays, etc., was held in wagons for appropriate periods.

On the completion of the first major expansion scheme in 1951, small stock piles were set up alongside the coal tippler sidings to meet the requirements of a further 90 ovens and by 1956 these stocks had been transferred to the main raw material stocking area due to the quantities involved. Coal was handled to and from stock by mobile cranes and a crawler-mounted bulldozer was used to grade and compact the piles in order to reduce the risk of a self-ignition in high volatile grades.

Results obtained from this were very unsatisfactory, however, as the low ground bearing pressure of a crawler-mounted machine promotes negligible compaction, and coal density could not be improved above 40-45lb. per cu. ft. In addition, the churning action of the tracks, driving sprocket and idler crushed the coal to a degree which caused severe difficulties in the flotation and washing plants at the coal washery.

The maximum tonnage of coal held in stock during this period was about 54,000 tons.

New Stock Yard

Under the expansion scheme completed in late 1956 the number of ovens was increased to 180, by adding a new battery of 90 and demolishing the original 54. As a result of this a new stocking area had to be found suitable for holding 80,000 tons of coal together with handling equipment capable of reclaiming from stock up to a maximum rate of 200 tons per hour. No specific rate was stipulated, for stocking out at this phase of the operation was entirely dependent upon receipts of coal.

The area selected was roughly triangular in shape with sides of about 2,000ft., 1,400ft. and 1,000ft. giving a contained area of approximately 80,000 sq. yd.

Rail tracks linking the area with the reception sidings were laid around the two shorter sides of the triangle together with rails for carrying a mobile wagon tipper and a Goliath type travelling grab crane of 5 tons capacity for reloading reclaimed coal into wagons.

The stockyard layout consisted of washed and raw coals in low, medium and high volatile grades laid out in individual piles roughly at right angles to the longest side of the triangle.

It was important that contamination should not occur between the various grades during the movement of coal to and from stock and in view of this and the previous unsatisfactory experience with crawler-mounted bulldozers, consideration was given to alternative types of stocking and reclaiming equipment.

As a result of subsequent investigations and inquiries it was decided to employ self-propelled rubber-tyred scrapers of 7 cu. yd. struck bowl capacity due to the fact that they could:

- (a) Load and discharge coal quickly without assistance from other machines.
- (b) Carry material without spillage.
- (c) Travel at relatively high road speeds within the stockyard.
- (d) Make, grade and compact stock piles.

(e) Be deployed in stockyards throughout the works without causing traffic congestion or damaging works road.

The two scrapers actually supplied for this work were the first of their type produced in the United Kingdom and suffered seriously from mechanical "teething" troubles when first put into service. The principle of operation, however, soon proved highly satisfactory.

Coals in the various volatile grades were laid out in piles of up to 500ft. in length and with a maximum height of about 16ft. The end slopes were limited to a 10 per cent. gradient in order to avoid wheel spin arising from weight transference from driving to trailing axle.

The avoidance of wheel spin on these operations is particularly critical as coal breaks up rapidly even when compacted. On end slopes this can cause bogging down, but on side slopes, which should be run down occasionally in order to seal against moisture impregnation, a break up of the surface can lead to a machine overturning. Side slopes should therefore not exceed a 25 per cent. to 30 per cent. gradient.

Precautions should also be taken against break up on the top of the pile, which should be at least three scraper widths wide in order to ensure stable conditions at the edges.

The general procedure during stocking out was to top load the scrapers by the grab after which they travelled via the roadways between the piles to the appropriate area of the stockyard. Reclaiming was simply a reversal of the procedure in which the scrapers self-loaded on the down grades of the piles and transported the coal back to the grab. During both these operations the grab was positioned at the most convenient part of the stockyard periphery.

A density of about 75lb. per cu. ft. was obtained without damage to the coal as a result of the compaction caused by the rubber-tyred scrapers operating over the piles and there was no evidence of self-ignition or heating up amongst the high volatile grades.

Increase in Stockyard Capacity

In the next major expansion scheme an additional battery of 80 ovens was scheduled together with minor additions to the existing batteries bringing the total up to 310. This meant a maximum ground stock of 140,000 tons and a possible peak reclaiming rate of about 6,500 tons per day.

It was calculated that the additional stocks could be held in the area originally scheduled for 80,000 tons due to the compaction and space utilisation being obtained but, in order to meet the increased rate of reclaiming, it was found necessary to lay a rail track along the remaining side of the triangle.

As the Goliath reclaiming crane had proved the least satisfactory item of the handling equipment due, amongst other things, to its inflexibility and the difficulty of replacement during breakdowns, it was decided to use large rubber-tyred shovels, which had recently become available in the United Kingdom, for loading the coal direct into wagons on the new track.

For general work these shovels used a 2½ cu. yd. bucket, but for coal handling they were equipped with one of 4 cu. yd. capacity which enabled them to lift a heaped load of about 4 tons.

The new ovens were due to be brought into commission in August 1959, but during the summer of 1958 the coke ovens became entirely dependent on coal from stock for about 14 days owing to a complete stoppage of outside supplies, which provided a useful exercise in a major recovery operation.

During this period two scrapers and a shovel working around the clock were able to meet the daily requirements of over 5,000 tons with the two scrapers working a shuttle service across the piles carrying loads alternately to the grab and the shovel thus eliminating empty journeys. The shovel was also used to load direct from

small piles, which had been laid alongside the new rail track.

It should be added that a bulldozer was employed to keep the coal at the grab in a heaped pile but this was not considered an essential part of the reclaiming system.

Annual Cycle

The ground stocks and reclaiming rates for the new ovens have since been met without adding to the equipment used and the present annual cycle of events to maintain 50,000 tons of balanced volatile coals in stock at all times, in addition to provisioning against known short falls in supply is as follows:

- (i) By the end of August stocks are almost completely run down after the summer coal lift.
- (ii) The build-up then commences to get 50,000 tons of coal in balanced volatiles on the ground. This is then increased by a further 21,000 tons to cater for a three-day stop in supplies at Christmas.
- (iii) During the early months of the year the rate of stocking out is increased to allow for a reclamation of 11,000 ton at Easter and a further 11,000 tons at Whitsun.
- (iv) Immediately after (iii) the stocking out rate is further increased in order to have between 120,000 and 140,000 tons in balance on the ground by July/August in order to meet a 30-day period during which coal receipts are reduced by about 50 per cent. and may be completely out of balance.

Apart from periods of peak reclaiming and stocking out only one scraper is employed on a day shift basis. The remaining machines are deployed on other work.

Maintenance

Scrapers tyres were originally of 24-ply rating but it has since been ascertained that 16-ply is sufficient for the conditions encountered. The tyres on the 2½ cu. yd. shovels have a 16-ply rating and on the larger 4 cu. yd. machines experiments are being carried out with 14- and 20-ply rating tyres to determine the economic minimum.

The general procedure with tyres is to re-lug before the original tread pattern has been worn completely smooth. The rubber used during re-lugging is harder than that in the original tyre and an improved life may therefore be expected. This process is repeated as often as the condition of the tyre will allow and a complete remould takes place when warranted by the state of the side walls.

Actual experience of tyre life on the scrapers and shovels working on coal and other raw material handling has been as follows:

2½ cu. yd. Shovels

- (i) Maximum life recorded for a 16.00 x 25-16 P.R. tyre: (a) new to re-lug—3,400 hours; (b) first re-lug—5,000 hours; (c) second re-lug—3,900 hours, total 12,300*.

*Tyre still in service.

- (ii) Maximum life recorded for 16.00 x 25-16 P.R. tyre: (a) new to re-lug—5,600 hours; (b) first remould—5,000 hours; (c) second remould—3,900 hours.

- (iii) Minimum life recorded for 16.00 x 25-16 P.R. tyre: (a) new to scrap—1,000 hours; (b) new to re-lug—1,951 hours.

4 cu. yd. Shovels

- (i) Maximum life recorded for a 26.5 x 25-14 P.R. tyre: (a) new to re-lug—3,400 hours; (b) first re-lug—2,580 hours*.

*Tyre still in service.

- (ii) Maximum life recorded for 26.5 x 25-20 P.R. tyres: new and still in service—1,200 hours.

Note.—These machines are only about 12 months old.

(Concluded on page 1177)

September 7 1961

THE CONTRACT JOURNAL

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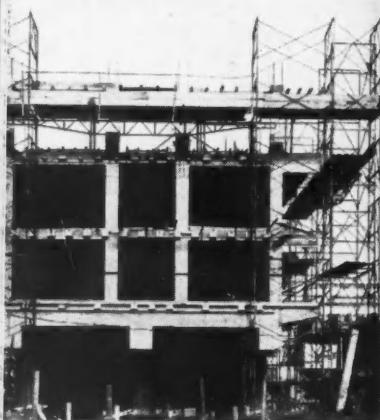
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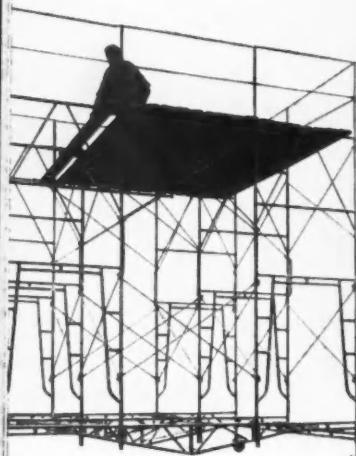
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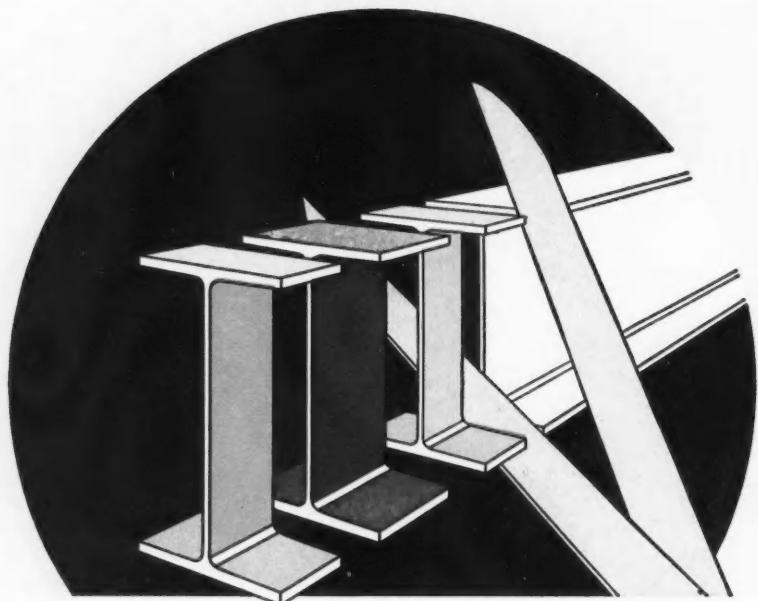
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Scrapers

(i) Maximum life recorded for a 18.00 x 25-24 P.R. tyre: (a) new to re-lug—6,600 hours; (b) first remould—2,500 hours*.

*Tyre still in service.

(ii) Maximum life recorded for 18.00 x 25-24 P.R. tyre: (a) new to re-lug—7,700 hours; (b) first remould—2,500 hours*.

*Tyre still in service.

(iii) Minimum life recorded for 18.000 x 25-24 P.R. tyre: new to re-lug—2,600 hours.

(iv) Maximum life recorded for 18.00 x 25-16 P.R. tyre: new to re-lug—5,700 hours.

(v) Minimum life recorded for 18.00 x 25-16 P.R. tyre: new to remould—1,300 hours.

Note.—The hours referred to are operational and are roughly equivalent to twice the engine hours.

The original scrapers are still used but the shovel has been replaced by one capable of handling a 6 cu. yd. coal bucket.

Although other scraper sizes are now available, we feel that the present single-engined self-propelled machines with the 12 cu. yd. bowls provide the most useful combination of power, payload and manoeuvrability for our requirements.

The machines self load without difficulty and the bowl size enables a near maximum payload to be carried. A larger bowled single-engined scraper would probably need to be push-loaded by a bulldozer or similar machine and a twin-powered scraper, i.e., one have engines at the front and rear, would tend to be over-powered for the maximum payload obtainable with coal even allowing for the maximum practical bowl extensions.

If the stockyard was to be redesigned, it is extremely unlikely that the Goliath grab crane would be included. Instead of this we feel that coal should be discharged by a mobile wagon tippler having a short boom conveyor which would enable it to top load scrapers when putting coal to stock. Reclaimed coal would then be lifted by scrapers and/or shovels and loaded into wagons by the latter.

It is important to note, however, that scrapers can only efficiently pick up material from piles which have been laid by similar machines and while shovels can readily be used for reclaiming, provided the pile is not too high, they are neither efficient nor suitable for large-scale stocking out operations.

Coke Handling

Owing to the lack of space on the site of the existing batteries the latest batch of 80 ovens referred to in "Coal Stocking" had to be constructed about 1½ miles away from the blast furnaces.

The alternative methods considered for delivering the coke from the ovens to the furnaces were:—

- (i) By conveyor belt—which was ruled out owing to the high capital cost.
- (ii) By rail—which would have entailed a considerable capital expenditure in the provision of track and wagons, and handling would have been expensive when the coke had to be put to stock during a blast furnace reline.
- (iii) By road—which was ultimately chosen because road access to the ovens was in any case required and capital expenditure on equipment could be limited to the purchase of vehicles.

It was estimated that on the 3.35 mile return journey a lorry could do 17 trips per shift and that two lorries of 34 cu. yd. capacity carrying 11 tons each and working continuously over the 24 hours could handle the make of the ovens. A third vehicle would be necessary as a reserve to cover maintenance and breakdowns.

These bodies would be subject to impact, abrasion and corrosion as the coke being

loaded would be both hot and damp. As very little was known of the wear likely to occur under these conditions it was decided to build three bodies of different materials as follows:—

Type of body—aluminium. *Specification*—body shell constructed of "U" shaped formations of extruded aluminium alloy bolted together through their flanges. Nominal thickness of extrusions 0.140in. and floor section reinforced by ¼in. thick rolled aluminium alloy plate. All material equivalent to B.S.S. H.E. 10. *Tare weight*—10 tons 8cwt.

Cor-Ten—body shell ¼in. thick Steel Company of Wales Cor-Ten sheet and floor reinforced by ¼in. plate of same material—11 tons 13cwt.

Fibreglass—body shell of reinforced plastics construction consisting of a minimum of six layers of 2 oz. glass fibre mat to fibreglass specification F.G.E. 2000 and polyester resin of type BP 805. Nominal thickness of body shell ¼in. at the floor tapering to ½in. at the top of the sides and the final few layers of fibreglass mat impregnated with pigment to B.S.S. No. 3-035—10 tons 3cwt.

A further advantage of using roads in this case was that the coke from the new battery had to be screened in a central screen house at the reception area to the blast furnaces. This screen house was designed to handle the coke from this battery together with any recovered from stock, as it was intended that during furnace relines the surplus coke would be put to stock and re-used when all blast furnaces were operating.

By using lorries, surplus coke could be tipped straight into stock with minimum damage whereas if rail traffic had been used it would have meant grabbing the coke from wagons with additional cost and damage.

Under the system which has since been developed loading is done from a hopper by means of a rotary measuring box which delivers approximately 4 tons of coke. It has been found that by equipping the vehicles with side extensions it is possible to take the contents of three boxes per lorry and that the output of the ovens at approximately 8,000 tons per week can be cleared by one lorry working eight hours per shift over the 24 hours and another working for half that time. The driver of the second vehicle is then available for alternative work during the second half of his shift.

About half a million tons of coke have been moved by the three vehicles in this manner between September 6, 1959, and December 31, 1960.

Maintenance

The vehicles used on these operations are standard eight-wheelers and no particular mechanical maintenance problems have arisen on them which could be directly attributed to the work involved other than accelerated tyre wear. This appears to have been caused by the fact that both back axles have to be driven and this results in severe scrubbing when travelling around fairly tight corners at relatively high speeds and with the assistance of power steering. Experiments are being currently carried out with various types of tyre to overcome this problem.

In the case of the bodies, however, serious difficulties arose at an early stage as a result of the action of the coke.

The top surface of the fibreglass body began to break up after only a few weeks' service and this resulted in the laminations being exposed with a subsequent rapid break-up which necessitated a complete relining of the body when 35,400 tons of coke had been carried in it. The relining was carried out using a coat of epoxy resin based, sand-laden paste in order to obtain a satisfactory abrasion resistance but this proved unable to withstand the flexing which takes place in large vehicle bodies and rapid break-up again ensued.

The aluminium body gave slightly better service but, as a result of a total failure the floor plates, had to be relined after 51,000 tons of coke had been carried in it.

By far the best performance was obtained from the Cor-Ten body which carried over 140,000 tons of coke before relining, and future bodies will consequently be made of this material.

Fine Ore Stockyard

At the time the Sinter Plant was designed it was envisaged that the provision of covered storage for all fine ore stocks would not be economic or practical and consideration was given to the utilisation of a large area of waste ground adjacent to the Sinter Plant as an open stockyard.

The covered yard was ultimately scheduled to take 50,000 tons of material about 50 per cent. of which would be scale, limestone, flue dust, etc.

The general requirements for the open stockyard were:—

(i) Sufficient capacity for 250,000 tons of fine ores and concentrates.

(ii) Handling equipment suitable for a maximum stocking out rate of 1,000 tons per hour and reclaiming at 500 tons per hour in the first stage. Future ore imports which would consist of a higher proportion of concentrates, might require these handling rates to be doubled.

(iii) Windborne losses of iron and the dust nuisance had to be kept to a minimum.

Earlier thoughts had been directed towards a long gantry served yard similar to those which had been installed for the two most recent blast furnaces. However, the rigid inflexibility imposed by fixed capacity yards of this type had already produced difficulties in coping with irregularities in supply, and it had been found necessary to employ mobile plant in order to improve stockpile capacity within the yards and to transfer material from one yard to another.

In addition, the nature of the ground in the proposed area was unsatisfactory for concentrated loads, piling and extensive foundation work with the result that the total cost of conventional stockyard was estimated at £972,000 made up as follows:—

Site investigation—£1,000; foundations, excavation and piling for double rail beam at 1,000ft. length—£450,000; roads, etc.—£10,000; steel structures for stocking out bridges and reclaiming crane—£311,000; stocking out and reclaiming belts running the full length of the stockyard—£100,000; electrics estimated at 12 per cent. of plant cost—£100,000.

In view of this very considerable capital investment and the difficulties being experienced with the long gantry served yards, consideration was given to the use of mobile plant as basic handling equipment in the yard.

Successful handling trials had already been carried out using scrapers and shovels on rubble ores but the confined layout of the existing stockyards restricted their use to the transfer of materials as previously mentioned.

Further trials were then carried out on handling fine ores and concentrates and, based on the results of these, a new estimate was prepared as follows:—

Site investigations—£1,000; foundations, excavation and piling—£6,000; roads, cable ducts, lighting towers, etc.—£10,000; steel structures, conveyors and machines—£90,000; import duty, freight and insurance for imported structures—£12,000; electrics estimated at 12 per cent. of plant cost—£20,000; provisional sum for mobile equipment—£100,000.

The yard subsequently developed is about 500yd. long by 200yd. wide. It consists of a number of stock piles about 400ft. long by 60ft. wide and 25ft. high each of which can contain up to 40,000 tons of ore. End ramps are kept as near to a 10 per cent. gradient as possible and excellent compaction is obtained on all material.

Fine ores and concentrates are delivered from the wharf to the Sinter Plant area by conveyor and are either tripped off in the covered stockyard or carried through to two hoppers in the open stockyard.

These hoppers load the scrapers through

discharge gates which can be operated by the drivers by means of pendant controls without leaving their cabs and the ore is then taken to the appropriate area of the yard for stocking out.

During reclaiming operations material is brought back by scraper to a ground grid which feeds a conveyor connected to the main reclaiming system.

This system has been in operation for about 12 months using the same type of scrapers and shovels as those employed at the coal stockyard although the scrapers are not fitted with bowl extensions.

Scrapers have to be push-loaded by shovels on all materials in the yard and a full rated payload of just over 9 tons is readily obtained during reclaiming or stocking out. This figure can, of course, be easily exceeded particularly when top loading from the discharge hoppers and care has to be taken not to overload to a degree which is detrimental to the machines and their safe operation.

Apart from a certain amount of wheel slip when reclaiming concentrates, all the materials held in the yard have been handled successfully by the scraper/shovel combination and stocking out and reclaiming rates to the furthest areas of the yard have been about 100 and 120 tons per machine/hour respectively.

Both the types of rubber-tyred shovels used at the coal stockyard perform very satisfactorily on fine ore and concentrates when using standard size buckets, but there is little doubt that a more powerful scraper is required to obviate push-loading which increases cycle times and is wasteful in machine operation.

The most suitable scraper would appear to be one having front and rear engines of appropriate horsepower matched to a bowl size which would accept a capacity load of high density material within the rated payload of the machine.

A 14 cu. yd. scraper having a rated payload of 21 tons and front- and rear-engined developing a total of 296 b.h.p. has recently been introduced in this country. This attracted immediate attention as a suitable machine for heavy material handling and a detailed report on the very successful trials carried out handling fine

ores and concentrates in this stockyard is contained in the British Iron and Steel Research Association's Report PE/H/38/60 dated October, 1960.

Maintenance

Considerable main clutch wear has been experienced on the scrapers and this is directly due to the fact that they are not suited to the handling of these materials. A larger and more powerful machine with torque converter transmission would obviate this problem.

Particular care has to be exercised in cleaning air filters and breathers at regular intervals to prevent ore dust accumulation and penetration and all oils should be periodically tested as a safeguard against contamination. Engines in which ore fines have actually contaminated the lubricating oil will have notoriously short lives.

Tyre wear is the same as that previously reported as the scrapers and shovel interchange between the fine ore and coal stockyards.

Disposal of Open Hearth Slag

Originally this was handled in an open gantry yard where a 40-ton overhead crane emptied the ladles into a pit in which the slag was fragmented and the iron removed by magnet. The remaining slag was then loaded into lorries for disposal.

When this method became inadequate to handle the increased output of the melting shops a new system was introduced. This involved the use of very heavy duty crawler-mounted cranes of 110-ton maximum lifting capacity which were equipped with generators capable of handling 65in. magnets having a lift of 40 tons.

One of these cranes is used for tipping slag pots and unloading the heavier material, such as "sticker" ingots which together with their moulds may weigh up to 40 tons. Smaller machines, which have a maximum lifting capacity of about 55 tons, are used for the lighter work and are able to move about the site and over works roads without causing damage.

All melting shop slag—about 10,000 tons per week—is passed through magnetic separators and the recovered material is then reloaded and returned to the melting

shops. The separators are mounted on crawler tracks so that they can be moved around site as required.

Owing to their greater mobility the smaller cranes are also used for ingot stocking whenever this becomes necessary. The adaptability of these machines for this application was first realised when the main pinion of the slabbing mill broke and, in order to avoid a shutdown of the melting shop, it became necessary to stock ingots in the open after they had been stripped.

Special double rope tongs were designed which the crane could use to handle the ingots which were too hot for magnet work, and by this means 30,000 tons of ingots were put to stock in one week by two machines.

A similar operation took place during the replacement of the old slabbing mill by the universal mill during which time the entire melting shop output was put to stock by cranes using the ingot handling tongs.

Summary

The rubber-tyred dumper, heavy duty shovel and self-propelled scraper have undoubtedly emerged as material handling machines in their own right. This does not mean that rail systems, conveyors and gantry crane, etc., will have no place in future steel works and other industrial undertakings, but there is no doubt that free-moving equipment with multi-purpose applications will play an ever-increasing role due to its ability to be deployed to meet prevailing conditions thus obtaining the maximum benefits from the capital invested.

In order to ensure that full advantage is taken of these new techniques the vehicles and equipment should be operated by specialised departments backed by an appropriate maintenance organisation.

A wide selection of robust and reliable machines are readily available on the world's markets and when properly selected, operated and maintained, these will provide the traffic manager and material handling engineer with new weapons with which to meet the economic and operational conditions prevalent in industry today.

"SCISSOR" ROOF FEATURED AT WEMBLEY SPORTS PAVILION

THE roof over the social hall of a new sports pavilion at North Wembley, Middx., is of an unusual design, consisting of scissor roof beam trusses clad externally with Stramit boarding and covered with three-ply Ruberoid felt.

Covering a total floor area of 5,170 sq. ft., the new pavilion was designed for Hoover, Ltd., by G. M. Vickers, F.S.A.,

Dipl. Arch., A.R.I.B.A., 1 Broad Street Buildings, Liverpool Street, London, E.C.2. The building contractors were John Laing Construction, Ltd.

The pavilion includes the social hall measuring 50ft. x 30ft., a bar, changing rooms and showers, and a fully-equipped kitchen. Deep red facing bricks and Ibstock blue-black bricks are used externally and featuring prominently in the design is a large window measuring 9ft. x

40ft. overall, facing the sports field. Surmounting this window, which extends almost the entire length of the hall, is a 15-ton reinforced concrete beam measuring 3ft. x 1½ft. x 50ft., which was cast in situ. Immediately in front of this window is a sun loggia. Both the ceiling and the floor of the social hall consist of parallel wax polished hardwood planks. The use of bare bricks on the interior walls and modern Danish lighting, together with large plate-glass windows give the building a light and attractive appearance.

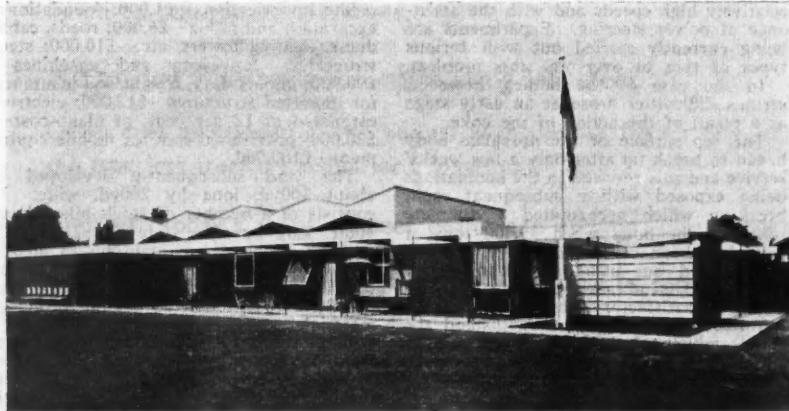
The changing and shower rooms are fully tiled and special non-slip Merthyrware ceramic tiles are used on the floors. All plumbing fittings were supplied by Nicholls Clarke, Ltd.

DANISH FIRM'S PLANS FOR CHANNEL TUNNEL

The Danish firm, Christiani and Nielsen, of Copenhagen, have prepared plans for an English Channel tunnel costing about £200m., which will soon be delivered to the British and French Governments.

Mr. Lassen Nielsen, director of the firm, said that over the past three or four years the company at their own expense had drawn up plans for a 32ft. by 97ft. rectangular tunnel.

The plans, "in many points different from earlier known projects," would provide for a double rail connection and four road traffic lanes. Initially cars would be carried the 20 miles between Dover and Calais by rail, but when suction equipment capable of ventilating the tunnel was properly developed the cars would be driven under their own power.



Exterior view of the pavilion

DESIGN OF ROAD PAVEMENTS

Urgent Need for Further Full-scale Experiments*

THE expanding road programme, involving the use of some relatively new materials for the construction of road bases and surfacings, has emphasised the urgent need for further full-scale experiments on the design of road pavements.

Since the winter of 1958/59, when cases of frost damage were reported to carriageways with unbound bases, an increasing use has been made of granular stone bases bound with small percentages of Portland cement. Laboratory research has shown that such bases are relatively unaffected by frost action: in practice they are easier to lay and compact in wet weather than the unbound materials previously used. Similar advantages result from the use of small quantities of bituminous binder mixed with the stone base material as a hot process; experiments are at present in progress to determine whether the bituminous material can effectively be introduced with the fines in the form of a cold slurry.

Further Experiments

Only limited studies by road experiments have been made as yet of the thickness and stability requirements for these relatively new base materials, but tentative specifications have been drawn up by the Road Research Laboratory in consultation with the Ministry of Transport and these specifications are being adopted on current road contracts. Proposals have been formulated during the year for two further full-scale road experiments in which the performance of cement- and bituminous-bound bases will be studied. One of the most important questions relating to cement-bound base materials is what is the most suitable composition, as indicated by the grading of the aggregate and the quantity of Portland cement; similarly, in the case of bituminous-bound material it is required to know what is the best combination of aggregate grading and binder content. This will be the subject of one experiment. It is known that such base materials used beneath rolled asphalt surfacings permit the use of an overall thickness less than that indicated by the California bearing ratio (C.B.R.) method of design and an experiment is to be carried out in which a range of thicknesses of both cement- and bituminous-bound materials will be used under various types and thicknesses of surfacing.

These two experiments, at Wheatley By-pass on trunk road A.40 in Oxfordshire and at Alconbury By-pass on trunk road A.1 in Huntingdonshire, respectively, will form a trio with the Alconbury Hill experiment, carried out in 1957, for assessing the relative performance of flexible pavements and will provide additional evidence on which to develop a modified method of pavement design.

These experiments will not be completed before 1962 and are unlikely to yield reliable results before 1964, although some information will be obtained somewhat earlier from roads now being constructed in which some variations in construction have been introduced. A trial of this type was started in 1960 on A.4091 near Tamworth by the Warwickshire County Council in co-operation with the Ministry of Transport and the Road Research Laboratory. The relative performance of sections with various bases laid in three thicknesses beneath a common bituminous surfacing is being studied. The bases included lean concrete, two asphalt materials and one tar-bound material. The Laboratory was responsible for a limited amount of site testing and has since carried out the detailed levelling of the sections to

determine the magnitude of any permanent deformation taking place under traffic. Differences in performance were observed after the road had carried traffic for only one month and the manner in which these differences develop is being closely observed.

The full-scale pavement design experiment on trunk road A.1 at Alconbury Hill in Huntingdonshire, constructed three years ago, has been kept under close observation. Transverse levels have been measured at regular intervals on each of the 33 sections of flexible construction, and deformation records obtained. The deformation is largely confined to the nearside traffic lane, which carried 90 per cent. of the heavy commercial vehicles, and is greatest in the track of the nearside wheels. (The experimental sections carry traffic in one direction only.) A similar distribution of deformation across the width of the road was found in the earlier experiment on trunk road A.1 north of Boroughbridge, Yorkshire.

Rolled Asphalt Best

The main conclusions reached after the road had carried traffic for about two years were as follows:

(i) The sections with 4in. rolled asphalt surfacings deformed much less than those with 4in. bitumen-macadam surfacings. The results from the sections with wet-mix, tar-coated stone and sand-cement bases showed that the deformations measured under 4in. bitumen-macadam surfacings were comparable with those under about 2in. of rolled asphalt. With the bases of lean concrete the difference in deformation between the sections with asphalt and bitumen-macadam surfacings was not quite so great as with the other base materials.

(ii) The rolled-asphalt bases gave the best overall performance and the sand-cement bases the worst performance. (The sand-cement used was made from a fine single-size sand using 7 per cent. of Portland cement. Evidence from this and other experiments has shown that such materials are not particularly suitable for cement stabilisation.)

(iii) Beneath a 4in. asphalt surfacing the effect on the measured deformations of increasing the thickness of base from 3in. to 6in. was much greater than that of increasing it from 6in. to 9in. This applied to all the base materials tested and is in line with the conclusions reached from the earlier experiment on trunk road A.1 north of Boroughbridge in Yorkshire, where increasing the base thickness to more than 11in. was found to have only a very small effect on the deformation where an asphalt wearing course was used. For the pavements tested in that earlier experiment it was shown that where the maximum permanent deformation measured after two years was 1in. or less the pavement would perform satisfactorily for at least 10 years (the period of the observations) without maintenance. If this same criterion can be applied to the Alconbury Hill experiment (where it must be remembered that the bases are of different materials), all the sections with 4in. rolled-asphalt surfacings and 6in. and 9in. bases should continue to perform satisfactorily except for the sections with sand-cement bases. All the sections with 3in. bases should prove unsatisfactory except for that section using a 3in. asphalt base.

The present standards of design set out in Road Note No. 29, published during the year, recommended a thickness of base of 8in. or 10in. for roads carrying traffic of the intensity experienced at Alconbury Hill. The experiments have shown that this thickness is adequate.

(iv) Although the information to date allows some estimate to be made of the equivalent thicknesses of the various base

and surfacing materials used in relation to the permanent deformations measured, it is regarded as too early to recommend any changes in the thickness of base to take into account the nature of the materials used.

(v) As was found with the earlier experiments reported in *Road Research*, 1959, there has been little evidence to show that the total thickness of the pavement, i.e. base, surfacing, and sub-base, is a major factor in determining its performance. A sloping sub-grade was used for each section of the Alconbury Hill experiment to give a variable thickness of sub-base along the length. In general the total thickness of construction at the thick end of each section was equal to the thickness required by the C.B.R. method of design, and at the thin end was slightly in excess of one-half of that thickness. No correlation has been found between the measured deformation and the overall thickness, indicating that the type and thickness of base and surfacing are much more important than total thickness in determining the deformation.

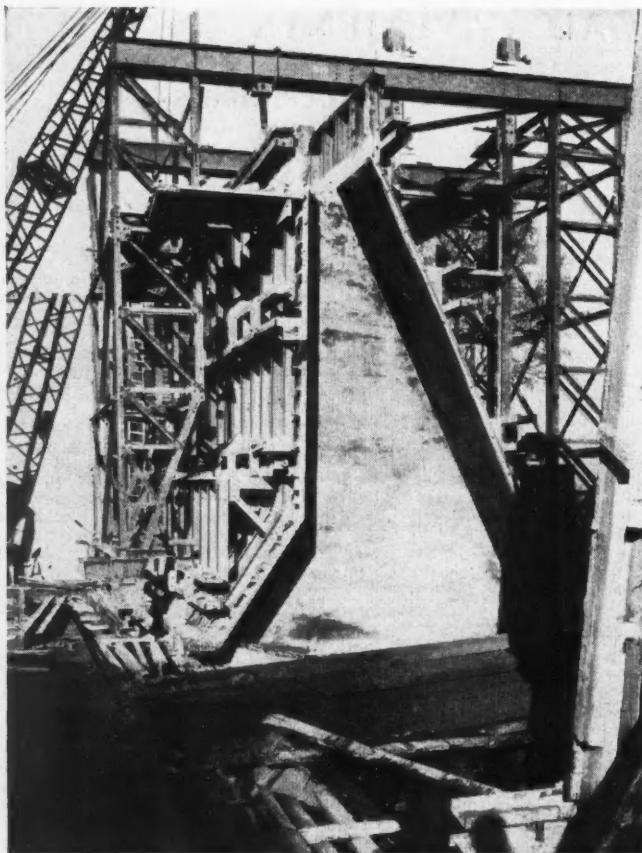
Design of Concrete Slabs

The experimental road at Alconbury Hill has now been open to traffic for about three years. The traffic on trunk road A.1 at that point is about 4,000 commercial vehicles/day (total commercial traffic in both directions). Reinforced slabs of 5in. to 10in. thickness and unreinforced slabs of 8in. to 11in. thickness are included and the only defects are in the 5in. and 6in. reinforced slabs in the nearside lane. A failure at an undowelled expansion joint in the 5in. thick slabs necessitated replacement of about 7 per cent. of their length but otherwise the crack interval is 21 per 1,000 linear ft. of road, excluding "hair" cracks. In the 6in. slabs the corresponding crack interval is 5 per 1,000 linear ft. of road. The average deflection of the dowelled expansion joints under a 6-ton axle load is only 0.0035in. No permanent settlement has occurred except at the undowelled joints in the 5in. slabs. It should be noted that the normal design thickness for the road would be 9in. of reinforced concrete with dowelled joints.

Static and repeated loading tests have been used in Great Britain and abroad to obtain information on the behaviour of concrete slabs but information is lacking on the correlation of the results of such tests with behaviour under road traffic. During the reconstruction of the failed areas in the experimental length of the Oxton By-pass (A.6097), Nottinghamshire, an opportunity was taken to investigate this matter. Static loading tests were carried out on the uncracked concrete in the lightly trafficked overtaking lane and the results were compared with the amount of cracking caused by traffic in the nearside lane. The tests were made on 3in., 4in. and 5in. thick slabs which were 10 years old at the time of the tests. The loads were applied by a hydraulic jack through a 12in. diameter steel plate. All the slabs carried loads considerably greater than the normal wheel loads imposed by ordinary commercial traffic. For instance, the 4in. slab carried a load of 19.5 tons at the centre without failure and at a corner cracking did not occur until a load of 10.3 tons had been applied. The maximum strain observed under a 10,000lb. load was 80 microinches/in. at the interior of a 3in. slab; experience has shown that strains of this size are unlikely to cause cracks. During the testing, compressive strains of more than 300 microinches/in. were observed on the surface without the occurrence of any visible cracking in the slab. Where corners had been protected from traffic by kerbs laid on the slab, the measured strains were smaller than for

(Concluded on page 1183)

*Extracted from "Road Research 1960" published for the D.S.I.R. by H.M.S.O., price 7s. net, by post 7s. 7d.



Parry steel wall shutter

A CONCRETE pouring rate of 130 cu. yd. a day was achieved on the construction of a new covered service reservoir at Farnborough, Kent, work on which is now

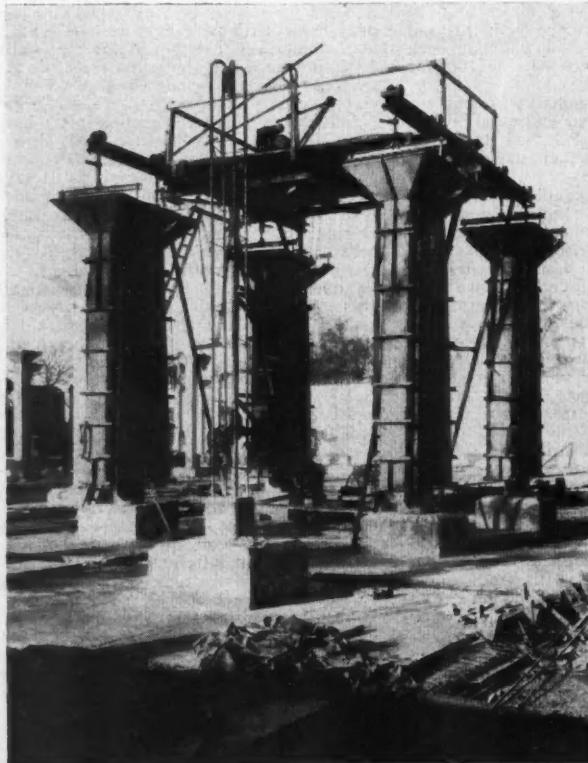
nearing completion. The mass concrete walls of the structure are 9ft. 6in. thick at the base and 2ft. at roof level, and this rate was necessary in order that bays of

22ft. 6in. and 24ft. could be completed without a break.

The reservoir forms part of a comprehensive scheme approved in 1958 by the

COVERED CONCRETE SERVICE RESERVOIR AT FARNBOROUGH, KENT

Mobile Steel Shutter Used In Construction



Parry steel column shutter



Completed columns, and construction joints in top floor slab before filling in

Metropolitan Water Board for the improvement of their supply to the Kent area which covers some 211 sq. miles. The scheme provided, inter alia, for the construction of two additional service reservoirs, one at Farningham, completed in August, 1960, and the second at Farnborough on a site owned by the Board adjacent to two existing service reservoirs of 2,925 million gallons combined capacity.

In October, 1959, the Board approved a recommendation that selected contractors should be invited to tender for the construction of a 5,000,000-gallon service reservoir at Cowless Hill, Farnborough. The design of the reservoir had been prepared for the Board in 1955 by the consulting engineer, Mr. Maurice Nachshen, B.Sc., M.I.C.E., M.I.Struct.E., M.Cons.E. Turriff Construction Corporation, Ltd., received the contract for the work, in the sum of £114,231.

The principal dimensions of the reservoir measured inside the vertical face of the walls are, 249ft. x 219ft. 6in., and the mean depth to top water level is 15ft.

A system of 4in. diameter porous concrete drains surrounded by stone fill and spaced at 12in. centres is laid below a 6in. layer of consolidated hardcore under the floor. The drainage system connects into an 8in. diameter glazed stoneware drain, laid jointed on a concrete base, and connects via an inspection manhole to an existing 15in. diameter drain.

The floor is constructed in three layers. First a 2in. thickness of "blinding" concrete was placed immediately after the last 9in. of excavation had been taken out. Next a 4in. thick under floor was placed and finally an 8in. thick reinforced top floor was laid.

The construction joints in the under floor divide it up into bays approximately 15ft. square. The joints are 2in. wide at the top tapering to 1½in. wide at the bottom and were caulked with concrete to the full depth after being cleaned out on completion of the placing of the under floor. The joints in the top floor consist of gaps 1ft. 6in. wide containing the lap of the fabric reinforcement and were not filled until the reservoir roof had been constructed. No construction joint in the under floor coincides with one on the top.

A Parry mobile steel shutter was used in the construction of the mass concrete walls of the reservoir. Gaps measuring 2ft. were left between the bays where the length is 22ft. 6in., and 3ft. where 24ft. Wooden shuttering was used for the wall corners.

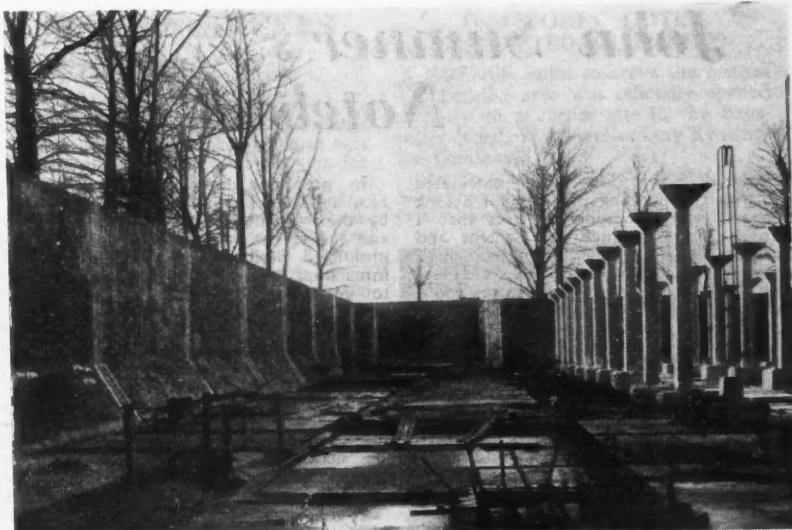
The gaps were concreted in at a later stage and a rectangular groove measuring ½in. on the face and ½in. deep was formed during construction, half of the groove being on the edge of bay and half on the filling of the gap. The grooves were filled with "Polycast."

Four contraction joints, one at mid-point in each wall, were formed using type "A" 9in. "Expandite" rubber water stop which terminated at the junction with the floor in a pocket 3in. x 2in. x 12in. filled with "Pliastic." A gap 1in. wide left between the edge of the under floor and the edge of the bottom of the wall was partly filled with "Flexcell" and topped with 1in. of "Pliastic."

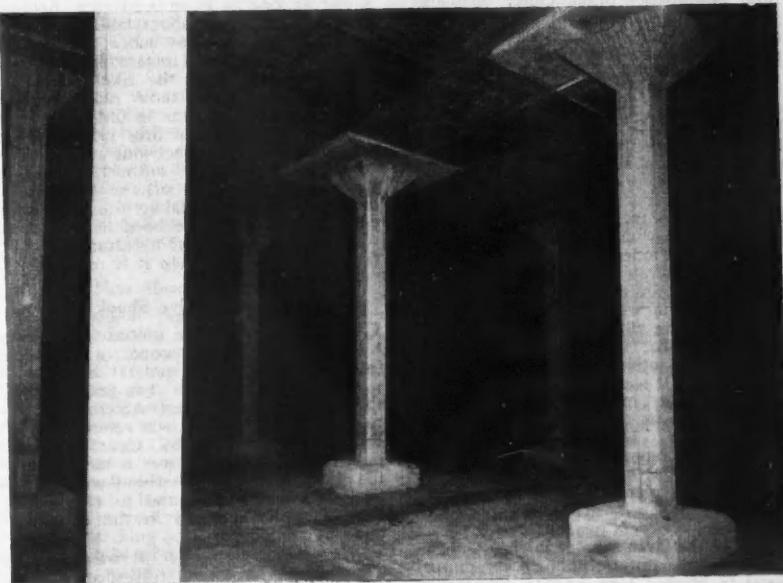
The top floor was stopped 1in. short of the sloping face of the wall section and the gap was caulked to within an inch of the top with dry 3 to 1 cement mortar placed after the construction of the roof of the reservoir. The top inch of this joint was filled with "Pliastic." A joint, corresponding to those in the walls was made through both floor slabs. It is 1in. wide and was caulked as above to within an inch of the top where the section increased to 2in. and was filled with "Pliastic." The "blinding concrete" at this joint increases to a depth of 4in. over a distance of 9in. on either side of the joint.

The roof slab of 6½in. thick reinforced concrete is supported by 224 reinforced concrete columns at 15ft. centres. A mobile steel Parry shutter enabled four columns

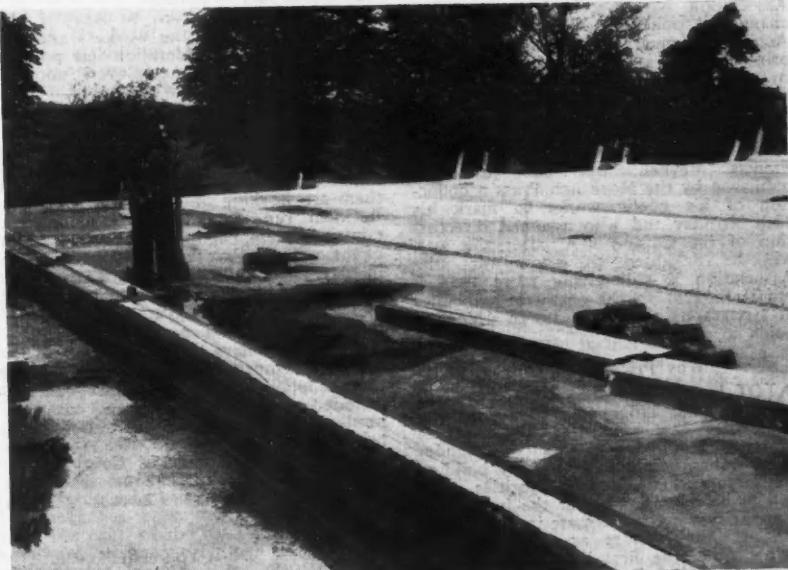
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General view of wall and columns



Interior of the reservoir



Reservoir roof, showing copper cap at joint and porous concrete drains with "no fines" haunching

John Sumner's Notebook . . .

IMAGINE that those closely associated with the building industry for a long time will scarcely credit the fact that it is over 25 years since the Cement and Concrete Association was brought into being to ensure that cement and concrete are used to the best advantages both technically and economically. I am reminded of the Association's quarter of a century of vigorous growth and development by the appearance on my desk this week of its report for 1960.

The Director-General, the Hon. L. O. Russell, O.B.E., T.D., expresses the view in an introductory note that concrete, if properly used, is the cheapest and most efficient material for most types of building and construction, and he seems to pinpoint one of the difficulties which the Association has consistently battled to overcome when he records the greater awareness there now is of the architectural potentiality of concrete. In earlier years there were examples without number of concrete buildings in which little or no thought had been given to appearance. There have been marked improvements since then and it is gratifying to note that some of our newer buildings—notably New Zealand House in the Haymarket, Liverpool Roman Catholic Cathedral and the new Commonwealth Institute (with a doubly curved prestressed concrete roof)—are being carried out wholly or largely in structural concrete used in the most sensible and sympathetic manner.

The introduction to the report also refers to concrete road construction and here a strong plea is made for a change in the basis upon which contracts for road construction in this country are awarded. There must be, it is argued, a greater measure of continuity and a larger scale of operations if we are to reap the benefits of large-scale mechanisation in road building such as are now enjoyed in the United States. The use of ready mixed concrete is reported to be increasing rapidly and it is noteworthy that in 1951 there were 12 plants, whereas today there are over 300, all maintaining a high standard of concrete quality.

This is the first time that the Association has seen fit to publish its annual report in printed form and to circulate it throughout the industry. Hitherto, it has been typewritten and only members of the Association have received copies. The change of policy is one on which the Association must be congratulated. The printed report is worthy of careful study by all with an interest in the construction industry and its work and most certainly a word of congratulation is deserved by those responsible for the typographical presentation and layout. No doubt Sir Francis Meynell, who has just had published by the Nonesuch Press a collection of his poetic works to mark his 70th birthday and who assumed directorship of the C. and C.A. after the war, will be delighted to know that the Association is still giving more than a casual thought to the aesthetic principles of typography and book design which he holds so dear.

Why Prices are Rising

NOT long ago I made some comments on the difference between local authorities' estimates of the cost of proposed building works and the tender prices subsequently submitted by building contractors. The local authorities seem still to be labouring under the impression that their own estimates are inviolable and that the contractors are pushing their prices up. The first is wrong, and the second is right. But before I get my ears metaphorically boxed by a number of incensed correspondents perhaps I should go a little further into the matter.

In preparing their estimates of cost local authorities are bound to be influenced by their experiences in the recent past, and the recent past happens to include a prolonged period during which building firms were literally at each other's throats to get work. In these circumstances many jobs were undertaken at unusually low and often uneconomic prices, but the firms concerned felt that they were well advised to adopt this course in order to keep their organisations intact and their men and machines fully employed. Since then much more work has come forward and, as one would expect at a time when the demand for services is high, the contractors' prices have risen. And not before time, either!

As I have said before, building work in this country today, with the possible exception of some sections of house building, is far too cheap in price, and has been so for as long as I can remember. Because there is more work about building labour, too, is costing a lot more than many people imagine. Contractors are also taking into account the likely trend in materials prices and labour rates over the next year or 18 months in order to cover their commitments on firm prices. They are also taking into account (and this is something the local authorities should particularly take note of) the competence and ability of the official architectural staffs concerned and the likelihood of being able to get from them all the necessary information about the job when it is required.

Retrospective Shock

SOME time back the unions in the cast stone and cast concrete products industry called for a general increase in wages of 3d. an hour. The employers in the industry could not accede to this request and the matter was referred to the Industrial Court. The Court's award, published on July 3—over a month after the hearing, provided the flash for an explosion which is bound to reverberate through every industry in the country—building included.

What was that flash? It was that the Court made its award retrospective and, at the same time, raised the amount to be paid by employers beyond the figure which the unions had demanded.

Backdating the award to April 1 the Court gave 3½d. to the workers and the British Employers Federation has pointed out that neither the employers nor the trade unions, in their written or oral statements, invited the Court to make its award retrospective.

One of the difficulties the employers in the cast stone and cast concrete products industry now face arises because many of them are working on firm price contracts. Between June 1 and July 3 many new contracts were negotiated, and the result of the award is that the cost of the increase in pay, which amounts, with overtime, to over 15s. per week per man, will fall entirely on the employers in respect of these contracts.

So there we have it. While the Ministry of Works exhorts building contractors and their suppliers (among whom must be included the cast stone and concrete products manufacturers) to submit firm prices for periods up to two years the President of the Industrial Court set up by the Ministry of Labour reaches a decision which makes nonsense of such exhortation.

A "Do-It-Yourselfer"

BY riding his bicycle in London Mr. Josseyn Hennessy reckons he saves £120 a year in bus, underground and taxi fares. And by clambering up a ladder he

has recently redecorated the outside of his house, thereby saving £175 odd.

Despite the satisfaction which these savings doubtless give to Mr. Hennessy I can report that in his view such Do-It-Yourself activities, far from adding to the national wealth, decrease it. What is more, he quotes that 18th-century hoary capitalist exponent of the greatest misery for the greatest number, Adam Smith, as his authority.

Mr. Hennessy develops his theories in an amusing but effective way in the August 26 issue of *The Statist*. He points out that multitudes of middle-class men and women plaster, paint and hammer, not because they enjoy it, but because high taxes reduce their incomes and because the power of millions of unionised workers to divert to themselves a greater proportion of the national income than their productivity justifies has forced up the prices of most services and of innumerable goods. He then offers a solution of this national waste of materials inefficiently used and of the middle-class time and energy diverted from its true skill by Do-It-Yourself. The solution, he says, lies with the trade unionists, and he asks: "When will they realise that the annual drive for higher wages, irrespective of productivity, narrows the market for their skills and decreases the buying power of their higher wages?" If and when they read this note the trade union chaps might like to recall a Gallup poll in Germany last year, which asked: "Which would you prefer—rising wages and prices, or stable wages and prices?" Eighty per cent. plumped for stable wages and prices.

Land Speculation!

YOU can believe it or not but the Staffordshire County Planning Department recently discovered that there are no less than 2,665 acres of land within the county for which planning permission has been given and on which no development has been started. Some of these permissions were granted years ago. This acreage is, of course, showing no return to the county and is stultifying normal building development.

Of the total area mentioned 2,110 acres are in urban districts—where one would expect pressure for development to be greatest.

To whom were these planning permissions granted? Why has development not taken place? Could it be that the applicants for planning permission are holding on while land prices rise, as they are bound to do with such a large area in the county virtually sterilised, until they make an even bigger profit when they do decide to develop and/or sell?

In the circumstances I am not surprised that this clumsy and almost primitive attempt at land speculation has made the County Council decide to be a lot more careful in dealing with future applications for planning permission. Welcome as this decision is, however, it still looks very much like locking the stable door after the horse has bolted.

Good P.R.

Cubitts, constructing the £3m. Cromwell Road Air Terminal, have assured residents in the area that they are doing all they can to minimise noise and inconvenience to them. From Project Manager W. J. O. Kerr has gone a personal letter to each resident explaining the difficulties (the site is bounded by three railway lines) and the steps being taken by the contractors to try to keep down noise.

Greenham Sand and Ballast Co. sent a personal letter to the occupants of the houses facing their new gravel plant at Chertsey Lane, Staines, inviting them to an "open day." Some 50 residents accepted the invitation, were shown the plant and the measures taken to cut down noise and suitably entertained. But Greenham also got a surprise. One resident brought along a painting of the plant he had done from his bedroom window which the company purchased on the spot!

Good Public Relations.

INSTITUTION OF MUNICIPAL ENGINEERS LOOKS TO THE FUTURE

ADRESSING a meeting of the North Western district of the Institution of Municipal Engineers held at Preston on Friday, the President, Mr. J. H. Melville Richards, M.I.C.E., M.I.Mun.E., A.M.I.Struct.E., borough engineer and surveyor of Harrow, said that in the past few years there had been a notable growth in the general standing and influence of the Institution.

This might not be so obviously apparent to members in the Districts, but they at the centre of things had noticed a marked increase in the number of matters of public policy on which the Institution was now consulted by the Government through the medium of special Government committees, working parties, and also directly by the various Ministries concerned with the professional field and interests of municipal engineering.

The Institution's influence the other way round had also been increased in recent years. This was particularly so when representations had been made recently to Ministers to modify policies so that in the opinion of the Council, a better service could be provided for the general public and also a proper weight placed on the professional position of the municipal engineer as the designer and constructor of the enormous volume of public works undertaken by local authorities.

Public Relations Policy

This increased influence could be put down in a large measure to the broad public relations policy drawn up by the Council only a few years ago. The Institution's presidents and vice-presidents had been making more personal contacts on the Institution's behalf with leading figures in public life, and this quiet and behind-the-scenes work had undoubtedly borne fruit. It had meant that a much greater call had had to be made on the time of the leading members of the profession, but this was very necessary, and those concerned had gladly given of their time in this way in the interest of the profession.

Recruitment Improvement

Another important development had been the improvement in recruitment to the profession as a result of the splendid Careers Booklet. Entrants to the profes-

sion were coming in at a slowly increasing rate each year and membership also was increasing steadily, even after allowing for deaths and resignations.

As a part of the Institution's contribution to the Commonwealth Technical Training Week in June a special reception was held at headquarters for careers masters in home counties grammar schools and a great deal was learnt from this. A special film was shown, on municipal engineering as a career and it was hoped that copies of this or a similar film would eventually be available to the districts.

As far as the general public was concerned and the importance of the municipal engineer in the Nation's life, a greatly increased quantity of favourable Press comment throughout the national and provincial newspapers, the local government and technical Press and also the B.B.C. sound and television had been obtained by the co-ordinated Press publicity issued by the Institution. A part of these activities was the Convention on "The Problem of Car Parking" held last year, which greatly enhanced the prestige of the Institution, not only in the eyes of the public through what was published in the newspapers and on the wireless, but also in relation to the Ministries and other professions. The second Convention on "Planning for Traffic" to be held on October 5, which promised to be just as successful, was a continuation of this policy and a further typical activity as recommended by the public relations report mentioned before.

The Council had decided to re-organise the Journal, starting with the January 1962 issue.

New Headquarters

The President said he had been empowered to take all steps necessary to purchase a new property as Institution headquarters. If these negotiations on the particular property, which had been seen by the Council, were successful, then this would dispose of one of the nagging anxieties of the Council for some years past—a suitable, well-placed and worthy headquarters building.

"From what I have said I think that you will be able to realise that the Institution's Council is working hard as a team to bring about all the benefits and improvements in services to members that have been so urgently needed," he concluded. "Now that policies to achieve these aims can be acted upon and the newly set-up special sub-committee at present reviewing the aims of the Institution in the light of present conditions and basing these deliberations on the solid achievements of the past few years, then the Institution can look forward to a rewarding growth in stature and influence commensurate with the great importance of municipal engineering in the life of the country."

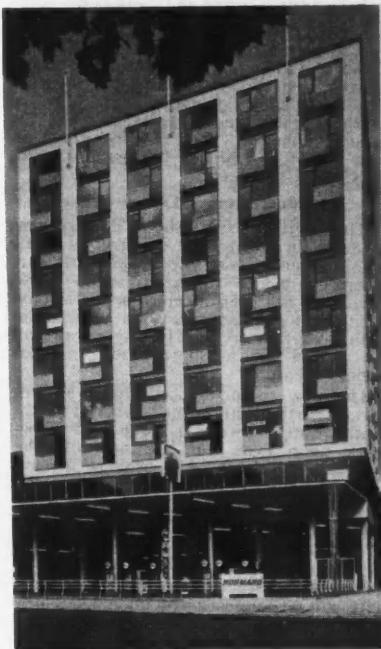


J. H. MELVILLE
RICHARDS

TEN-STOREY HOTEL COMPLETED IN LONDON

ANOTHER hotel to serve the central London area was officially opened recently on a corner site in the Bayswater Road, W.2, overlooking Kensington Gardens.

The building, the Hertford Hotel, has been erected for Trust Houses Ltd., at a cost of £300,000. It has a service station



Hertford Hotel

and garage accommodation on the ground-floor level, and reception and public rooms on the first floor. There are 77 bedrooms each with private bathroom.

Construction is mainly in reinforced concrete faced with Empire Stone and blue mosaic panels. The window span of rooms at the front to the hotel is 8ft., and in other parts of the building it is 5ft. 6in. Most of the rooms are arranged on the studio bed-sitting room layout.

Architects for the hotel were Lam, Biel and Partners. The main contractors were Sir Robert McAlpine and Sons, Ltd.

HOUSING COMPLETIONS

The number of permanent houses completed in Great Britain during July was 23,932 compared with 23,985 in July, 1960.

In the first seven months of 1961, 168,454 permanent houses were completed compared with 167,919 in the same period of 1960.

(Concluded from page 1179)
corners adjacent to the centre joint. The deflections of the slabs were also measured and under a 10,000lb. wheel load a 3in. slab deflected by 0.014in. at the interior and 0.034in. at the corner; the latter is a little greater than is normally considered acceptable.

A significant relation was observed between deflections measured during the loading tests on uncracked concrete in the lightly trafficked overtaking lane and the length of cracking in the nearside traffic lane.

Lean Concrete Bases

An experiment was carried out on the Whitchurch By-pass (A.470), Glamorgan, to determine whether the strength of lean concrete bases affected the incidence of cracking in an asphalt surfacing. Concrete mixes having cement contents ranging from 100 to 250lb./cu. yd. of concrete (propor-

tions of 1:35 to 1:14 by weight) were used to obtain crushing strengths ranging from 650 to 3,450lb./sq. in. at 28 days. The road consisted of a 3in. two-course rolled-asphalt surfacing, an 8in. thick lean-concrete base and an 8in. granular sub-base. It was laid on a clayey-silt soil with a variable stone content; full details were given in *Road Research*, 1959. After 12 months of heavy traffic (1,500 to 3,000 commercial vehicles per day) only one crack has occurred in the surfacing of the 7,700ft. of carriageway. It is too early to compare the performance of this road with other roads. Levelling has shown that settlement has been small and uniform. In 85 per cent. of the road an upward or downward movement of less than 0.01ft. occurred and in only 3 per cent. of the road, partly at a bridge approach, did this movement exceed 0.02ft.

In 1954 light reinforcement fabric was included in the lean-concrete base of a

120yd. length of bituminous-surfaced road laid by Crawley Development Corporation. The fabric reduced the early development of cracks and, after six years, only fine cracks have appeared in the surfacing, at an average interval of 16ft. The Laboratory co-operated in further experiments in 1956 and, after four years of use by building-construction and other traffic, the average crack interval in surfacings on 10in. reinforced lean-concrete bases is 100ft. compared with 49ft. for 10in. and 12in. unreinforced bases. Apart from two hair cracks over reinforced bases, all the cracks are fine cracks. The lean concrete had proportions of 1:14 by weight and a crushing strength of 1,350lb./sq. in. at seven days. It is laid on a clay subgrade. The improvement in performance by the use of light reinforcement fabric is considered to justify further experiments: these are to be made on heavily trafficked roads.

DURHAM MOTORWAY

Minister Publishes Draft Scheme

PROPOSALS to establish the route of a further 21 miles of the Durham Motorway have been published by Mr. Ernest Marples, Minister of Transport.

The proposed line of route has been surveyed for the Ministry of Transport by the Agent Authority, Durham County Council (county surveyor, Mr. W. H. B. Cotton, M.Inst.C.E., M.Inst.Mun.E.).

Connecting with the proposed Darlington By-pass at a point on the Great North Road (A.1) near Aycliffe, the route passes to the east of Aycliffe, to the west of Bradbury and Coxhoe, to the east of Durham and Great Lumley, and to the west of Lambton. The motorway will rejoin A.1 on the Birtley By-pass just north of Chester-le-Street.

Viaduct Across Lumley Dene

The central part of the motorway runs through industrialised country of little scenic interest, but at the northern end, where it passes through Lumley Park, great care has been taken to select a route which will not interfere with the natural beauty of this area. The motorway will be carried on a short viaduct across Lumley Dene.

The new motorway will form an important further link in the improved north-south route between London and Newcastle upon Tyne and, together with the Darlington By-pass, will provide a continuous motorway extending over a distance of 31 miles. It will considerably relieve the overloaded highway system in the area.

22 Bridges

In addition to the terminal junctions there will be connections with A.177 south of Bowburn and with A.690 at Carrville. All other roads which cross the line of the motorway and have to be kept open will be carried over or under. A separate Order dealing with the Minister's proposals for alterations to side roads affected by the construction of the motorway will be published later. The scheme will involve the construction of 22 bridges.

"PLANNING FOR TRAFFIC"

One-day Convention Plans

Nearly 1,000 delegates from local authorities and others professionally interested in the subject of "Planning for Traffic" have so far indicated their intention of attending the Institution of Municipal Engineers' convention to be held on October 5, 1961, at Central Hall, Westminster, S.W.1.

Mr. John Hay, M.P., Joint Parliamentary Secretary, Ministry of Transport, has agreed officially to open the Convention and to address the delegates.

An interesting and comprehensive programme of papers and also an exhibition, organised jointly by the Institution and the British Road Federation, of models and photographs of some of the latest developments in planning for traffic has been arranged.

Early Applications

Places are still available to attend the Convention, but applications should be made without delay, it is stated. The fee, which will include the special Convention Brochure containing preprinted copies of the Papers to be presented and also covering admission to the sessions, is £2 10s. per person attending.

Any member or others wishing to attend should obtain an application form from the Secretary, The Institution of Municipal Engineers, 84 Eccleston Square, S.W.1, and complete and return it together with the appropriate fee as soon as possible.

Tickets and the special Convention publication containing the papers will be sent shortly to those attending.

DEATH OF MR. R. B. CARNEGIE

IT is with regret that *The Contract Journal* records the death of Mr. R. B. Carnegie, C.B.E., county surveyor of Devon. Mr. Carnegie, who was aged 58, went to Devon in 1946 from Scotland where he was county surveyor of Inverness for four years, and Shetland for seven years. The first year of his arrival in Devon saw winter storms almost without precedence in that part of the country, and Mr. Carnegie was able to bring his Highland experience into the county and to organise snow clearing which dealt with the severe conditions in a way hitherto unknown.

From that moment Mr. Carnegie's name was known throughout Devon and this fame was continued in 1952 during the disastrous Lynmouth floods. At that time he moved with his staff to Lynmouth and took charge of the engineering problems involved and was able, with his practical knowledge, quickly to organise relief and the rebuilding of the stricken town and neighbourhood. For his work at Lynmouth he was awarded the C.B.E.

He will also be remembered in Devon as the instigator of many improvement schemes which have altered the face of the county in many respects. One of the most important, the by-pass road at Clyst St. Mary, was opened as recently as July of this year.

Mr. Carnegie was a past president of the Institution of Highway Engineers, and a member of the Institution of Municipal Engineers and the County Surveyors' Society. He is survived by a widow and two sons, both of whom are following their father in the civil engineering profession.



THREE TOWNS TO TAKE BIRMINGHAM OVERSPILL

The Government have concluded that a combination of measures is necessary to provide a satisfactory solution of the immediate problem of accommodating Birmingham's overspill, no one type of remedy being sufficient. It has therefore been decided to encourage town expansion schemes under the Town Development Act, 1952, at Daventry, Redditch and Worcester, and to alter the line of the proposed green belt at Wythall on the eastern side of the Alcester Road by joining up some of the existing pockets of development, states the Ministry of Housing and Local Government.

The first of these measures could be expected to provide for a maximum total population of, say, 25,000 for Daventry, 60,000 for Redditch and 100,000 for Worcester, and the second would provide an additional 600 acres of new land for development. Mr. Henry Brooke, Minister of Housing and Local Government, has already announced that he is investigating the possibility of building a new town at Dawley in Shropshire.

When these measures are put into effect it may be that other over-crowded areas in the West Midlands conurbation may derive relief from them.

Discussion will now take place between the various government departments and the local authorities concerned about the details of the proposed schemes and where it is appropriate they will be advertised in order that the public may consider them and make representations if desired.

Mr. Ernest Marples, Minister of Transport, has made an order authorising the installation of 637 parking meters in the Metropolitan Borough of Finsbury.

Late Construction News

TWO 20-STORY BLOCKS.—Subject to Ministry approval, Newcastle upon Tyne City Council are to accept the negotiated tender of Leslie and Co., Ltd., 20 Peel Street, London, W.8, for building two 20-storey blocks, containing 240 flats, at Westgate Road. The cost, including eight garages, will be £721,591. The blocks will be erected on cylinder-type foundations to a depth of up to 70ft.

EDGWARE OFFICE BLOCK.—Wates, Ltd., 1258 London Road, London, S.W.16, have begun work on a 14-storey block of shops and offices at the Goods Yard, Station Road, Edgware, Middx. Estimated to cost £400,000, the development is being undertaken by the Churchgate Property Co., Ltd. The architects are John D. Morgan and David C. Branch, 8-16 Great New Street, London, E.C.4.

NOTTINGHAM OFFICES AND SHOPS.—An eight-storey block of shops and offices is to be built at Wheeler Gate/Friar Lane, Nottingham, by the Pearl Assurance Co., Ltd. The contractors, W. J. Simms, Sons and Cooke, Ltd., Haydn Road, Nottingham, have recently started work. Plans are by Cartwright, Woollatt and Partners, 4 Clarendon Street, Nottingham, and the quantity surveyors are Messrs. Gleeds, 7 Clinton Terrace, Derby Road, Nottingham.

COLERAINE HOUSING.—Coleraine (Londonderry) B.C. have accepted the £240,407 tender of O'Hara and McCluskey, Claudy, for the erection of 114 houses, 24 old people's dwellings, 14 corner flats and 35 garages. Completion is scheduled within 18 months.

SOLIHULL CAR FACTORY.—A contract to build a new car body assembly hall and paint shop at The Rover Co.'s factory at Meteor Works, Lode Lane, Solihull, has been placed with Robert M. Douglas, Ltd. The consultants for the scheme are: Hasker and Hall, architects, 13 Welbeck Street, London, W.1; Crosher and James, quantity surveyors, 329 High Holborn, London, W.C.1; and Thomas Bedford and Partners, consulting engineers, 41 New Bond Street, London, W.1.

AMERSHAM LABORATORY.—The U.K. Atomic Energy Authority have awarded a £260,000 contract to W. and C. French, Ltd., Buckhurst Hill, Essex, for the erection of a physics and general service laboratory at the Radio Chemical Centre, Amersham. The buildings will be mostly in precast concrete. Work has just commenced and will take 60 weeks.

FAREHAM DRAINAGE SCHEME.—The tender of A. Streeter and Co., Ltd., Catteshall Wharf, Godalming, at £206,464, has been accepted by Fareham (Hants.) U.D.C. for the construction of main drainage relief sewers. Some 7,700yd. of stoneware, concrete, spun-iron and steel pipe sewers are to be laid. The consulting engineers are Waterhouse and Rounthwaite, 165 Westmorland Road, Newcastle upon Tyne, 4.

£4M. PORTSMOUTH DRAINAGE PLAN

Two tunnel sewers at depths of from 30ft. to 50ft. are the main feature of a £4m. scheme for improving Portsmouth's drainage system. The scheme was approved in principle by the City Council at their meeting on Monday.

Some £15,000 is to be spent immediately on site investigation for the tunnels and £9,000 on urgent improvements to the Eastney pumping station.

WARWICK INNER RING ROAD PROPOSAL

A recommendation that an inner ring road is needed in Warwick as well as the town's proposed by-pass has been approved in principle by the council's general purposes committee. The proposal, suggested by the planning and development committee, is designed to keep the historic and shopping centre of the town free from through traffic. No decision on the detailed route has been made.

QUALITY OF ROAD MAINTENANCE WORK CAUSING CONCERN

Greater Use of Plant Needed

GIVING his presidential address at the annual conference of the Institute of Works and Highways Superintendents at Lytham St. Annes yesterday, Mr. A. S. Seymour, highways superintendent, Wolverhampton, said quality of work was a consideration that was causing concern to many works and highways superintendents. On road maintenance works in particular, the gangers and rakehands of a few years back were often non-existent today and quality of work had suffered as a result of this.

"In most cases, the reasons for this change are beyond our direct control but we are still faced with the problem of finding a remedy," he continued. "In my opinion, the remedy lies partly in a much more extended use of all types of machinery for roadmaking. When the purchase of an item of plant is under consideration, all too often the deciding factor is the number of working hours that can be expected from the item of plant over a certain period. Too little attention is given to the quality of the job that the item might produce or to the manual effort that it will save."

"Those of you who deal with public cleansing will know that modern trends are towards making manual tasks more attractive, for example, by providing dustless loading, paper bag collection of house refuse and white overalls for workmen. Why not the same for the road worker? He is no less important! Just because a certain machine can lay 200 tons of material in an eight-hour day, is that any reason why it should not be employed to lay only 40 tons, if that 40 tons is laid better and quicker than a gang of workmen can lay it? In building, the hod has almost given way to the brick elevator, the barrow hoist and pre-packed bricks. Let the road maintenance organisations not lag behind with the introduction of modern methods wherever possible."

"Manufacturers can play their part by producing new forms of material which require less skill to use, and yet produce a better job. Let us consider concrete paving slabs as an example. Throughout the country generally there is an acute shortage of street masons and paviors but much could be done to reduce waste of time and materials in slab paved footpath construction if radiated paving slabs were manufactured to fit the standard concrete kerb radii. In some parts of the country manufacturers make paving slabs in mul-

tiples of 3in. from 1ft. 6in. in length to 3ft. In other parts of the country it is only possible to obtain paving slabs in multiples of 6in., necessitating needless cutting on the part of the pavior—and waste to the user. In modern times we cannot afford these uneconomic practices."

Public Relations

"Public relations are a factor upon which a municipal engineer's department is often judged, and bad public relations can cause an unhappy time from top to bottom of that department. Quite often, a municipal engineer might judge his works superintendent by the number of complaints that he receives when a job is in progress, and who can blame him for this? At our level, if there is any lack of good public relations, it is often caused not by a desire to be unco-operative but by pressure of work, shortage of staff, and lack of understanding on the part of workmen when dealing with the public and their property."

"The introduction of incentive bonus in one form or another to many aspects of our work has increased the difficulties of the supervisor, at least in so far as workmen's relations with the public are concerned. All this should not deter us from our responsibilities in this sphere, for public relations, properly conducted, can often turn criticism into support."

Decreasing Wage Differential

"The type of supervisor required in a modern municipal works department has changed from that which was required a few years ago. The modern supervisor works in what can only be described as a buffer state and often feels, with some justification, that he is constantly being attacked from all sides. Not only does he have to withstand criticism from the public and those above him, but also quite often, in cases where incentive working has been introduced, from those beneath him if there is any delay on a job which can be attributed to a failure on the supervisor's part. Furthermore, in modern times he can only encourage workmen and never threaten them."

This naturally stresses the need for the type of supervisory training provided by the Institute, but it is regrettable to have to point out that in many instances the wage differential between the modern supervisor and those he supervises is decreasing and indeed some of us know of instances where junior supervisors receive less pay than tradesmen they supervise. For obvious reasons, this state of affairs should not be allowed to continue."

DRAINAGE OF MOTORWAYS

Problems to be Investigated by R.R.L.

THREE problems relating to the drainage of motorways require investigation states the Road Research Laboratory*. These are:

(i) The drainage of the carriageway surface. Significant amounts of water are often retained on the surfaces of carriageways for considerable periods after rain. This water is a source of danger and inconvenience. It results in a heavy spray of water being thrown up by fast vehicles, it reduces the visibility of the carriageway at night and it can result in the formation of dangerous patches of ice in frosty weather. To determine how this trouble can be minimised, an experimental section of carriageway is to be constructed at the Laboratory, to study the effect of the transverse gradient and the roughness of the surface.

*"Road Research 1960," published for D.S.I.R. by H.M.S.O., price 7s. net.

(ii) The longitudinal roadside drain. There are considerable differences between the specifications of drainage arrangements for major roads in rural areas, and some drainage systems may be inadequate, while others may be over-designed.

To obtain further information on this matter arrangements are being made to record the rainfall and the rate of flow in the drains of eight sections of motorway having different types of drain, subsoil and rainfall characteristics.

(iii) The design of culverts. Better methods are required for calculating the design rate of flow of water courses flowing through culverts. Since motorways involve the construction of a large number of culverts, this problem is of particular importance at the present time. It will be studied by carrying out hydrological investigations in collaboration with the H.R.S. at three catchment areas.

A QUESTION OF PAYMENT

To the Editor of "The Contract Journal,"

Sir,—The recent dispute over terms of contract used by Darlington Corporation referred to by "John Sumner" in your issue of August 24, has wider implications than just the desirability of all employing authorities using one standard form of contract. Alderman J. A. Alsop is reported as saying that the R.I.B.A. Form of Contract safeguards everybody. But does it? Sub-contractors have long argued that they are entitled to more protection against delays in payment by the main contractor, and against the possibility of non-payment because of his insolvency.

The system of direct contracts used by Darlington Corporation gives the subcontractor the protection he requires because he is paid direct by the Corporation. It must be admitted that, on occasions, sub-contractors prefer to be nominated where they have more faith in obtaining payment from the main contractors than from the client. It is also true that the system of direct contracts may still leave the main contractor with a considerable amount of co-ordination work to do but with no 2½ per cent. discount in payment for it. The 2½ per cent. discount system has, in any event, been criticised as an unsatisfactory method because the amount of co-ordination work does not necessarily vary precisely with the value of the contract and it has been suggested that a co-ordination fee would be a preferable method. It is, however, interesting that the Working Party on Building Operations found that, while at first sight the system of direct contracts seemed likely to be relatively inefficient owing to the difficulties of co-ordination, they received no evidence which justified them in pronouncing that this was, in fact, the case.

With regard to the question of bankruptcy, the article "A Lawyer Considers" in the same issue makes it clear that only the nominated sub-contractor is protected by the R.I.B.A. Form and that even his protection is not complete.

This position stems from the fact that the employing authority is not a party to the sub-contract. It has been suggested that in order to overcome the problem the employing authority should become a limited party to the sub-contract as a guarantor of payment to the nominated sub-contractor if the main contractor fails.

On the question of delays in payment, the R.I.B.A. Form of Contract gives fair better protection, but this protection is once again reserved for nominated sub-contractors. The architect has the right before issuing any certificate to demand reasonable proof that all nominated sub-contractors' accounts included in any previous certificates have been duly discharged. This protection only breaks down through poor administration. The architect should advise nominated sub-contractors of the amounts owing to them in certificates issued to the main contractors. Nominated sub-contractors in turn should advise the architect when they receive payment or complain if they do not receive it.

There is also a valuable provision under the R.I.B.A. Form of Contract for payment of nominated sub-contractors' retention money before final payment is due to the main contractor. Although the R.I.B.A. issued a Practice Note on this matter in May, 1958, it seems that architects do not use their discretion in this matter nearly enough.

On the whole the protection of sub-contractors' money, particularly non-nominated sub-contractors is by no means complete. Let us hope that the position will be improved in the current revision of the R.I.B.A. Form of Contract.

Yours, etc.,
"NORTHERNER."

Ministry of Works have offered a substantial grant to an appeal fund which is being launched to restore St. John's Hospital, Coventry, one of the oldest buildings in the city.

Men and Movements

WITH effect from December 4 the new managing director of J. Gerrard and Sons, Ltd., will be Mr. Thomas Coates, M.Eng., M.I.E.E., M.I.Mech.E. In the meantime he will act as general manager. Mr. Coates was, until recently, deputy chairman of the North-Western Electricity Board.



T. COATES

Mr. A. D. Holland, T.D., B.Sc.(Eng.), A.M.I.C.E., has been appointed divisional road engineer, north Midland division, Ministry of Transport, in succession to Mr. L. W. H. Savage, M.Eng., M.I.C.E., who is retiring on September 15.

The Goodyear Tyre and Rubber Co. (Great Britain), Ltd., have announced the appointment of Mr. Peter Gomm as manager, public relations, a newly created post. Mr. Gomm joined Goodyear in 1947 and since has been editor, Goodyear Publications.

Mr. Robert Butler, previously a director of Quasi-Arc, Ltd., has been appointed managing director of Eutectic Welding Alloys Co., Ltd.

Among passengers recently disembarking from the "Queen Elizabeth" at Southampton was Sir Harold Bellman, a director of Taylor Woodrow.

The retirement has been announced of Mr. G. H. Walton, a director of British Insulated Callender's Construction Co., Ltd., and of Painter Bros., Ltd., both members of the BICC group. He had served with the group and its predecessors for more than 47 years. Mr. Walton, who is also a former director of BIC (Submarine Cables), Ltd., and of Engineering Projects, Ltd., relinquished his executive duties as joint general manager of the BIC Construction Co., Ltd., in 1958, but continued to occupy a seat on the board and to undertake special assignments.

Mr. Kenneth S. Bradshaw, Birmingham branch manager of Cox and Danks, Ltd., a member of the Metal Industries group, has been appointed Midlands director of Cox and Danks, Ltd., based at Birmingham.



The photograph shows Mr. J. M. Harris, managing director of Holland & Hannen and Cubitts (Great Britain), Ltd., presenting the Cubitt Safety Cup to Mr. D. Cook. The winning site was at Swindon, where a factory is being erected for the Pressed Steel Co., Ltd.

Mr. F. L. Griffiths, M.Inst.F., M.I.Plant.E., has relinquished his post as works engineer of the Fraser and Chalmers engineering works of the General Electric Co., Ltd., at Erith, to take up the post of constructional engineer to the whole of the G.E.C. organisation.

Mr. T. H. Isherwood, joint managing director of the Bromford Iron and Steel Co., Ltd., for the past 10 years, has tendered his resignation from the board. He will be devoting his full time to his other interests, namely, All Steels, Ltd., and Bert Evans (Press Tools), Ltd.

The managing director of Crompton Parkinson, Ltd., Mr. J. V. Daniel, has resigned from the board of Atomic Power Constructors, Ltd., following the withdrawal of Crompton Parkinson from the consortium.

Saville (Tractors), Ltd., have announced that with the opening of their new branch at Southampton Road, Salisbury, Mr. W. L. Passmore has been appointed general manager. Mr. Passmore was sales manager for the Midland area for construction equipment, based at Head Office, Stratford-on-Avon. His new appointment includes



W. L. PASSMORE

M. J. BYRNE

the responsibility for construction equipment and agricultural machinery. Mr. Michael J. Byrne has been appointed as successor to Mr. Passmore as sales manager for construction equipment, Midland area. Mr. Byrne was previously a representative for this type of equipment in the Midland area for the company.

Leaving London recently for Oslo on a tour series which will take him from Scandinavia to West Africa was Mr. William D. Coxson, export manager of Quickset Water Sealers, Ltd. (one of the Cementation group of companies). He is to conduct a survey of the market in Norway and Denmark, and plans to appoint agents in both countries. Mr. Coxson will go to Copenhagen in mid-September and when his survey there is completed he will be flying to Africa. There he intends to liaise with the company's two main agents, Construction Plant and Materials, of Lagos, and the Anglo-American (WA) Development Company of Accra. After a series of visits with them to clients in Nigeria and Ghana he will go on to Sierra Leone for another market investigation.

The new chairman of Joseph Sankey and Sons, Ltd., from October 1, will be Mr. R. P. Brookes, succeeding Mr. H. F. Hodgson who is retiring from the position as well as that of managing director. He will be succeeded as managing director by Mr. G. B. Sankey, at present assistant managing director. Mr. Hodgson will continue to be a director of the company, and also a director of the parent company, Guest Keen and Nettlefolds, Ltd., and other GKN group companies.

The Minister of Transport has appointed Mr. P. E. Lazarus to be his Principal Private Secretary in succession to Mr. J. R. Madge, who is being promoted.

Miss Kik Hong Ong, of Ipoh, Malaya, a student at London University, is working during the summer vacation as a student civil engineer for John Laing Construction, Ltd., on the Staffordshire section of the Birmingham-Preston motorway. She is the first woman to be employed in this capacity by the company. Miss Ong was awarded a scholarship by the State of Perak last year and when she has completed her training will return to Malaya.



MISS KIK HONG ONG

In accordance with the company retirement policy of Constructors John Brown, Ltd., Mr. R. M. Wynne-Edwards has relinquished the post of joint managing director, but will remain on the board. Formerly joint managing director, Mr. J. A. R. Staniforth becomes managing director. Mr. H. D. Walker has retired from the board, but will continue to be associated with the company as a consultant and as a director of two subsidiary companies, Automatic Control Engineering, Ltd., and Corrosion and Welding Engineering, Ltd.

Associated Commercial Vehicles, Ltd., have announced that their main subsidiary company, A.E.C., Ltd., subject to Argentine Government approval, have entered into an agreement with SIAM Di Tella Automotores S.A. to manufacture A.E.C. passenger and goods vehicles under licence in the Argentine. Mr. J. D. Slater, commercial director, and Mr. R. G. Bennett, export manager of A.E.C., Ltd., are at present in Buenos Aires, having finalised these negotiations, and an interchange of technical and manufacturing executives is now taking place in both the U.K. and the Argentine.

Esso Petroleum Co., Ltd., have appointed Mr. E. J. Sims as manager of the bitumen department, following the relinquishing of this position by Mr. M. J. Aldrick for health reasons. Mr. H. T. Pullen has been appointed assistant manager.

The Nuralite Co., Ltd., a member of the British Uralite group, have announced the appointment of Mr. K. A. Griffin, of Liverpool, as their northern representative.

International Harvester Company of Great Britain, Ltd., have appointed Mr. James R. Boerger as director of manufacturing, succeeding Mr. G. Gordon Davis, who has returned to the United States. Mr. Boerger has been elected a member of the board. He joins the company from the Metropolitan Stamping Co., a Harvester subsidiary, where until recently he was plant manager. Mr. Boerger has been with the IH organisation since 1947.



JAMES R. BOERGER

Mr. Robert Mills, commercial director of the Bromford Iron and Steel Co., Ltd., West Bromwich, has been appointed to serve on the executive committee of the North American export section of the Birmingham Chamber of Commerce. Mr. Mills has over the last few years been connected with the Reinforced Concrete Association as Midland chairman, and he has also been on the Association's London Council and finance committees.

CLOSE CO-OPERATION SPEEDS £2½M. BREWERY BUILDING

From a Correspondent

KEYNOTE of a fast construction schedule at Alton, where John Laing Construction, Ltd., are erecting a new brewery for Arthur Guinness, Son and Co. (Park Royal), Ltd., and Courage, Barclay and Simonds, Ltd., in conjunction with Mitchells and Butlers, Ltd., is a particularly close degree of co-operation between contractor and client in all stages of planning and execution.

A six-acre site is being developed, and on completion early in 1963, the brewery will consist of six main sections, covering some 116,000 sq. ft. These sections include a two-storey grain handling building, a five-storey silo building, a four-storey office and laboratory block, a three-storey brewhouse, a single-storey refrigeration plant and a five-storey fermentation and storage block.

The size of the undertaking is reflected in the provision made for 150 cylindrical mild steel storage tanks and 23 stainless steel fermentation vessels to be installed in the latter block. The heaviest of these will weigh 11 tons and the tanks will be carried 70ft. up to position by a specially constructed gantry.

Poor Ground Conditions

The area being developed had an original slight fall to the river Wey and is underlain by decomposed and water-logged chalk, with a gravel stratum bordering the stream. Due to the poor ground conditions, the building is being carried on in-situ piles, some 700 Franki piles having been sunk. Prior to the commencement of piling, the site was levelled, some 15,000 cu. yd. of decomposed chalk and overburden being removed by an International Harvester BTD. 20 tractor and scraper, a D.955 traxcavator being employed for final levelling of corners, etc. During this stage a new main 24in. diameter sewer was installed to by-pass the old sewer.

A particular difficulty encountered was the high water table and at one time five springs were in operation during levelling. Considerable inflows were encountered during the excavations for the new line of the sewer, the water being handled from 10ft. sump by two Sykes 6in. Univac pumps with a combined capacity of 140,000 g.p.h. at this lift. On completion of the levelling, the site was covered with a working base of some 7,000 tons of hoggin, spread with

a BTD. 6 and compacted in 6in. layers with a 3-ton roller.

The Franki piles of 17in. diameter cast in situ were sunk through this working mat to depths of between 18ft. and 22ft. This operation being carried out in nine weeks. Each pile is designed for a loading of 50 tons.

Subsequent excavation round the tops of the piles for the pile caps has been carried out with a two lever JCB.4 on hire from Western Plant, this excavator being fitted with an 18in. bucket for close-quarter work. The excavations range from 3ft. square to 12ft. square according to the number of piles served by each cap, very little hand work being required to finish the pile cap excavation. Final trimming of the piles prior to the emplacement of the reinforcement grillage has been effected with Consolidated Pneumatic type FL22F picks.

Concrete for the caps has a minimum strength at 28 days of 3,000lb. and is prepared on site in a Benford 18/12 batching plant, the mix being delivered in Benford dumpers of matching capacity which ensures the avoidance of spillage.

Underfloor Services

Underfloor services include sewers for effluent, storm water and sanitation. The excavations for these are being opened through the hoggin mat with a JCB.4 fitted with a 30in., three-in-one bucket of 11.7 cu. ft. capacity, loading out to Bedford 3-ton trucks. According to the positioning of the trucks, the average round digging and loading cycle time varied from 21-26 sec. when digging at a depth of approximately 3ft.

The contract is the first completely new brewery project to be carried out in the U.K. for many years. The architectural and engineering design, including electrical and mechanical services is being carried out by John Laing Construction, Ltd., in conjunction with engineers of A. Guinness Son and Co., Ltd., seconded for this project. The high tensile bolted structural steelwork is being carried out by Dorman Long, Ltd.

The engineer in charge of the project for the brewery consortium is Col. H. M. Leyland, M. I. Mech. E., M. I. Chem. E., M.I.Eng. (deputy engineer for A. Guinness and Son.) The project manager for John Laing is Mr. G. J. Baker. The quantity surveyors are Andrew Roberts and Partners.

HYDROLOGICAL SURVEY OF ESSEX RIVERS AND STOUR BASINS

A HYDROLOGICAL survey* of the Essex Rivers and Stour basins by the Surface Water Survey of the Ministry of Housing and Local Government has recently been published.

The survey is the third in a series which is being made on the recommendation of the Central Advisory Water Committee. The survey of the River Great Ouse basin was published in June last year and the survey of the Severn River basin was published last November.

The survey of the Essex Rivers and Stour basin covers one of the driest parts of the country and is the first to show definite water deficiency in an area. The report of the survey will provide essential information for water undertakers local planning authorities, the river boards, industrialists, farmers and all who need to possess comprehensive information about the water re-

sources of the area and the demands upon them.

The foreword makes it clear that the suggestions or expressions of opinion in the report are the responsibility of the authors and are not to be taken as an indication of the Minister's views. Where, for example, the report refers to possible reservoir sites, this means no more than that, if in due course further storage capacity is needed, it would seem, *prima facie*, that the sites indicated were worthy of consideration.

The survey is in three parts. Part I contains the four general sections dealing with area and population, hydrology, rainfall and hydrogeology of the basin. Part II describes in detail the position in the five sections of the area; and in each section there are tables showing abstractions and returns of water, and a water use balance sheet.

Part III, which includes a bibliography, shows the way in which the development of the water resources might be approached.

*Hydrological Survey of the Essex Rivers and Stour Basins. H.M.S.O. price £1.

HOUSE PRICES CONTINUE TO INCREASE

Considerable Regional Variation

ACCORDING to the Co-operative Permanent Building Society's Bulletin, existing house prices rose on average by 6 per cent. and new house prices by 7 per cent. during the first six months of 1961.

The rise in the prices of existing houses was most marked in the higher ranges. Dwellings costing more than £2,500 (London over £3,000) rose by 7 per cent. during the period whilst those in the lower ranges increased on average by almost 4 per cent. In the June quarter the Society's overall index of second-hand house prices (1939 = 100) stood at a new peak of 391.

The national figures conceal considerable variations between the Society's regions. The outstanding feature of the property market continues to be the marked disparity between prices in the London area and in the rest of the country. In the second quarter of the year, the average price paid for existing dwellings in the London region, by borrowers from the Society, exceeded £2,900. This was more than £700 or 33 per cent. higher than in any other region.

New Houses

The average prices of all new properties mortgaged to the Society rose to £2,621 in the final quarter of 1960 to £2,802 in the second quarter of 1961. The Bulletin shows that new, as well as existing, house prices display considerable regional variations. During the second quarter of the year, the average price of new houses in the London region exceeded £3,550. This was more than £400 higher than in any other region and over £1,200 higher than in the North-Eastern region.

The Society's index of housebuilding costs rose by 1 per cent. during the first six months of the year to 129 (1952 = 100). But this index is calculated solely on basic labour and material costs. It takes no account of rising land prices which clearly have exerted a considerable influence during the period under review.

JETTY PONTOONS PINNED TO SEA-BED

Being completed later this year near Hubberston Point, for the use of the Milford Haven Conservancy Board's craft, is a jetty and breakwater which employs a new construction technique.

Three pontoons of reinforced concrete—prefabricated in the Milford Haven Dock Co's dry dock—have been floated out and sunk in position at the jetty head to form a foundation for the jetty.

The pontoons have slots through which concrete piles are driven, pinning the structure to the sea-bed. Each pontoon weighs 1,000 tons, is 100ft. long by 24ft. wide and is 16ft. deep at the foundation.

The permanent jetty superstructure consists of prefabricated pillars and beams which are to be sheeted in steel above low water so that the structure forms a breakwater.

The consulting engineers for the project are Posford, Pavry and Partners, Westminster, a member of the Association of Consulting Engineers, and the contractors Peter Lind and Co., Ltd., London.

NORTHERN IRELAND ROADS

More Money Allocated

The Northern Ireland Ministry of Commerce have informed Belfast Corporation that the total amount available for distribution to road authorities in the two years ending March 31, 1964, will be £7,350,000—an increase of approximately 50 per cent. compared with the total distributed in the two years ended last March.

Talking of Safety

by
"DRAGEE"

THE pensioner walked slowly across the little park to his favourite seat. When the sun was hot—as it was on this day—the hollow shell of the old war-battered church made cool shadows, and when later in the autumn the cold winds came the scarred walls would provide him with kindly shelter.

He looked at the ruined church with renewed affection. Although he had seldom been inside the place he felt that they had, in a way, grown old together. In their years, they had faced great enemies, and each of them had suffered grievous wounds. Honourable scars, that's what they call them, he told himself. He smiled and shook his head . . . then felt for his glasses and newspaper.

Presently he heard approaching footsteps. They moved ponderously, crunching over the gravel with careful deliberation. Without looking up, the pensioner moved a few inches along the seat and braced himself against the moment when it would tilt slightly on its shortest leg. But nothing happened, and he looked up in surprise. A tall, rather shabby young man stood regarding him with doubtful eyes.

"Mind if I sit down?"

"Of course not. Plenty of room."

The young man hesitated, then lowered himself slowly. The seat gave a slight backward lurch.

"Don't worry about that," said the pensioner encouragingly. "Nearly everything round here's falling to pieces. Even me." He chuckled.

The young man settled himself against the arm-rest and lit the stub of a cigarette, carefully watching the pensioner as he did so.

"You come here often?" he asked.

"Yes, when it's fine."

"Thought you did. I've seen you here before. I usually go to the other place,

"Dragee," who is a practising safety engineer, would welcome subjects for discussion in this column. All names of persons mentioned in these discussions are entirely fictitious. Questions of law are expressed as the author's personal opinions and are not claimed to be authoritative.—EDITOR.

the one next to the library. Sometimes I read a book. My aunt belongs to the library and sometimes she fetches a couple of books, one for herself and one for me."

He threw away the remains of his cigarette, and nodded towards the church. "You know what? That was a fine building once. Not very old as some churches go, but well built. See those arches? That was a proper craftsman's job."

"You in the building trade?"

"I was, but not now. I wouldn't go back to it for anything, not if they begged me on hands and knees I wouldn't."

Thought for the Week . . .

No construction job is ever safe until it's done.

The pensioner shrugged. "Nobody can force you to go back."

"You're dead right there." He leaned sideways and touched the pensioner on the arm. He lowered his voice. "If you want to know, they're still looking for me," he said.

"Who are?" asked the old man. He was surprised at the undertone of panic in the other man's voice. If offended his soldierly instincts. "Something scared you?" he asked, a trifle sourly.

The young man nodded. "It happened last winter on the first block of flats we built in the New Town, exactly a year after the bank robbery. You read about that?"

"Yes, I remember. Somebody was shot when they made their getaway. There were three of them—escaped jailbirds, weren't they?"

"That's right. Their pictures were in the papers, and I don't forget faces easily. When the painters came on the job I thought I recognised one of them, but I wasn't sure. Then one night I saw him coming out of a back street club with two other chaps, and I knew then that I was right. He caught sight of me and stopped dead. Then he started pulling something out of his pocket and I began to run, but

he fired two shots quickly and I felt something graze the side of my head. They must have taken fright then because they hurried off. I managed to get back to my aunt's house, and then I passed out."

"Did you tell the police?"

"No fear. I was too damn scared." The young man lowered his head and pointed to a long deep scar over the left ear.

"When you get one of those you don't go to the police. At least, I don't. Not when you've got two men after you."

"I thought you said there were three."

"Did I? I must have got it wrong." He stood up. "I'm sorry if I made a mistake," he said stiffly.

The pensioner got up, too, and was about to reply, but at that moment a neatly dressed elderly woman came through the little iron gate. She saw the two men together and walked towards them.

"Ready for tea, Arthur?" she said to the young man. He nodded and walked away without a word. His aunt paused, then turned back to the pensioner.

"It's nice here," she said. "I suppose poor Arthur has been telling you about his scar?"

"He was saying something about a gunman."

"Oh, dear, I do wish he wouldn't talk about such things."

"Then —?"

"It was only an accident. He was working at the flats when a brick fell and struck him. Of course, he doesn't remember a thing about it."

When the pensioner was alone again, he folded his paper and tucked it into his pocket. He looked up at the shattered church tower. The clock had stopped long since, but time still went on. "Bricks or bombs," he said to himself, "that's the way it goes."

(Concluded from page 1181)
to be cast at each setting of the shutter. The roof area is quartered by joints having a gap of 1in. On either side of the gap the roof is thickened in two steps, 6in. in depth, and the top step is capped with 20 s.w.g. copper strip with braised joints. The whole of the roof area is covered with $\frac{1}{2}$ in. thick asphalt spread in two layers on underfelt.

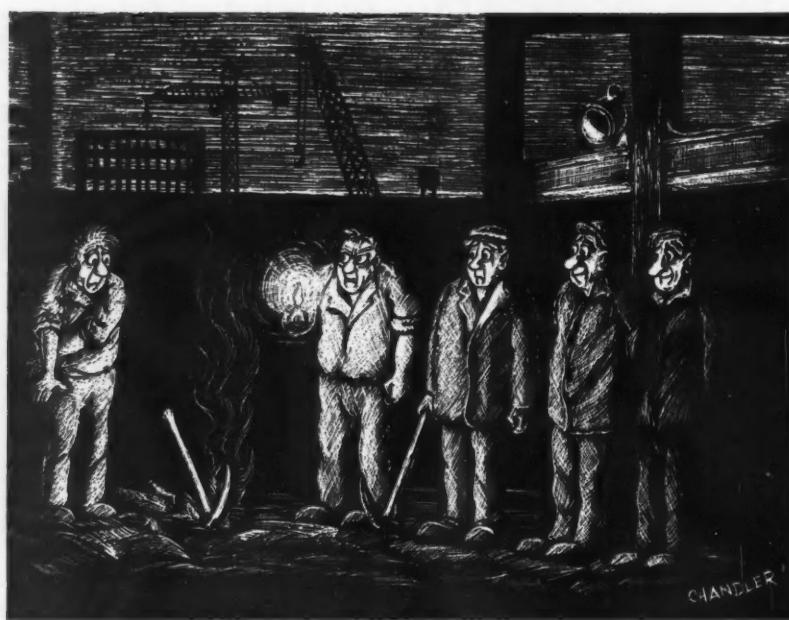
A system of 3in. diameter porous concrete drains is provided over the roof, the drains being haunched with "no-fines" concrete and "no-fines" concrete drains connect the roof drains with those around the outside toe of the walls. A space between the haunching of the drains on either side of the roof joint and the edge of the copper cap was filled in with cement mortar to seal the "no-fines" concrete and then with hot-poured "Pliastic" next to the copper.

It is interesting to note that the "Pliastic" defied the efforts of thieves to remove the copper cap. The top of the copper cap is protected by 9in. x 9in. x $\frac{1}{2}$ in. clay tiles and the whole of the roof carries a 9in. thickness of earth fill with 6in. of top soil, all derived from the excavations. The walls are surrounded by earth fill with top soil placed with side slopes of 2 to 1.

Water is fed into or drawn from the reservoir through an 18in. diameter cast-iron main which connects to an existing 24in. diameter main. A 15in. washout and overflow main is provided and the valves controlling the inlet/outlet main and the washout are housed in a pit formed by an extension of the main wall at the south-east corner of the reservoir. Here also is located a brick water level recorder house from which a concrete stairway with brick balustrade leads to the interior of the reservoir.

A system of louvres in the walls of the recorder house permit the reservoir to "breathe" there being no ventilators on the roof.

The works were carried out under the direction of the M.W.B.'s new work engineer, Mr. F. Tattersall, M.Sc.(Eng.), M.I.C.E., A.M.I.W.E. The resident engineer is Mr. H. R. H. Waters, A.M.I.C.E., A.M.I.Struct.E., A.M.I.W.E.



"Did I, or did I not, say look out for the main power cable?"

CONSTRUCTION BOOM IN SECOND QUARTER

Increase in All Types of Work

CONTRACTORS in Great Britain carried out constructional work to the value of £600 million in the second quarter of 1961, according to provisional figures collected by the Ministry of Works. The index of production, which rose by 4 per cent. compared with the first quarter, was the highest recorded, and was 8 per cent. higher than a year ago.

Production

There was an increase in all types of new work compared with a year ago, after allowing for price increases. Work on industrial building was 19 per cent. higher,

private miscellaneous building rose by 10 per cent. and work for public authorities, excluding housing, by 14 per cent.

New housing work rose by 6 per cent. compared with last year, with a small increase in work on houses for public authorities and an increase of 9 per cent. in housing for private developers.

Employment

The provisional figure for the number of operatives employed by contractors in the construction industries in July this year was 1,105,000. This was 15,000 less than in June but 19,000 more than in July last year. The decrease compared with June is probably accounted for by men changing jobs during the holiday period.

CONSTRUCTION IN GREAT BRITAIN

1. Value of Work Done by Contractors (at current prices)

	1960	1961	£ million	
	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
New Housing				
For Public Authorities	59	62	59	65
For Private Developers	88	99	103	111
Housing Total	147	161	162	176
Other New Work				
For Public Authorities	103	107	112	124
For Private Developers:				
Industrial	75	84	98	102
Miscellaneous	58	62	65	69
Other New Work Total	236	253	275	295
Total All New Work	383	414	437	471
Repair and Maintenance	117	122	127	129
Grand Total	500	536	564	600

2. Operatives Employed by Contractors*

	1960	1961	thousands	
	April	July	April	July
New Housing	288	294	291	289
Other New Work	443	453	483	480
Repair and Maintenance	332	339	337	336
Total	1,063	1,086	1,111	1,105

Note: * Insured operatives aged 15 years and over, excluding administrative, technical and clerical workers and self-employed operatives.

3. Index of Production

Changes in the volume of work done are shown in the official index of industrial production. The index numbers for construction are as follows:—

1954 = 100

1st Quarter	1960	2nd Quarter	1961	1st Quarter	1961	2nd Quarter
115		117		121		126

MODERN METHODS OF TRAFFIC CONTROL

Exhibition At Science Museum

THE control of ever faster, ever more voluminous traffic flow by automatic devices, dispensing with slow and unreliable hand operation, is the theme of a small exhibition to be seen at the Science Museum, South Kensington, from September 13 until October 1.

This Modern Traffic Control Exhibition has been arranged by the Westinghouse Brake and Signal Co., Ltd., at the Science Museum to coincide with the opening there, by Lord Brabazon of Tara, of the London Conference of the International Commission for Transport Museums. It illustrates, by means of actual equipment and working models, a few of the types of device employed in controlling safely the more rapid flow of traffic on road and on rail. Particular attention is paid to those regions of British Railways undergoing electrification.

Signalling Equipment

The public will be able to see at the Science Museum temporary exhibition the "Westronic" demonstration model which shows how all the points and signals in a particular signalling location are controlled, some distance away, from a central control cabin, which also receives an indication of the condition of the remote points and signals and the position of trains passing through. They will also see the Automatic Barrier Machine and its associated equipment which ensures that road traffic is stopped for the shortest possible time at level crossings. Other railway signalling equipment devised to

prevent false operation or damage to it by interference from the traction system will be shown in model form.

Road users visiting the Exhibition will be interested in the "Road Traffic Lane Divider," for varying the width of traffic lanes at the approach to main junctions or cities according to the direction and volume of traffic.

The Science Museum is open on weekdays 10 a.m. to 6 p.m. and from 2.30 p.m. to 6 p.m. on Sundays.

NINETY CYLINDRICAL FOUNDATIONS IN SIX WEEKS

Foundations for Camelot House, the 16-storey "T" shaped office block being erected on the Albert Embankment, are almost completed.

Ninety cylindrical piles have been excavated by Economic Foundations, of Victoria Street, Westminster, in six weeks. The majority are bored to a depth of 55ft. and a few to 65ft.

Diameters of the shafts vary between 3ft. and 7ft. Bases have been belled out up to 15ft. in diameter. The cylinders have been excavated by two boring rigs and one crane using the "corkscrew" auger method of drilling.

Main contractors for the £1,500,000 project are Sir Robert McAlpine and Sons. The architects are T. P. Bennett and Son, and the engineers are R. T. James and Partners.

RAILWAY INTO ROAD

Another A.1 Improvement

A LENGTH of abandoned railway line is to be used for a new "fly-under" junction as part of the modernisation of a further one and a half miles of the Great North Road (A.1) in Huntingdonshire.

Mr. Ernest Marples, Minister of Transport, has authorised Huntingdonshire County Council to place a contract with A. Monk and Co., Ltd., in the sum of £391,182 (*The Contract Journal*, August 24), for carrying out this work, which will link earlier improvements to the south of Buckden and north of Buckden railway bridge.

On this length, the village of Buckden is astride the trunk road, which is narrow and winding, and there is a junction with the Huntingdon Road (A.141) at Buckden Way Post where visibility is restricted. To avoid demolition of property and the retention of the existing 30 m.p.h. speed limit on the trunk road, a short by-pass will be constructed to the west of Buckden High Street. The new road will then follow the general line of the present route.

Dual Carriageways

The improved road will have dual 24ft. carriageways with a central reservation varying in width from 15ft. to 50ft. There will be two pedestrian subways. A round-about will control traffic at the southern end of the village.

When the scheme is completed, all traffic from the south travelling to Huntingdon will turn left off the trunk road on to a link road beneath the old Buckden railway bridges and continue down the disused railway line, which will be converted into a 22ft. carriageway. This link road, passing beneath the A.1, will join the A.141 at the site of the Buckden Station Bridge, which is to be demolished.

The existing length of A.141 from the station to the Way Post will be mainly used as a link road for traffic from Huntingdon to the south. Both link roads will, however, be two-way roads.

The scheme has been prepared by Huntingdonshire County Council (county surveyor—Mr. R. E. C. Dorling, B.Sc., A.M.I.C.E., A.M.I.Mun.E., M.I.H.E.), which will also supervise the work. It is expected that the new lengths of road will be open to traffic by the autumn of 1962.

SCARBOROUGH TOWN HALL EXTENSIONS

Scarborough Borough Council are inviting tenders (see page 1160) for the erection of two wings to the Town Hall of approximately 377,360 and 162,700 cu.ft.

The borough engineer is Mr. V. Forshaw, M.Eng., A.M.I.C.E., A.M.I.Mun.E.

(Concluded from page 1174)

From just north of Dunstall Barn to the site of the future Strensham Service Area—about three miles—the roadworks are in an advanced state, awaiting final surfacing. They pass through a 30ft. cutting, partly in rock, at Boughton Hill, and under the four-span concrete bridge carrying the Upton-Pershore road (A.440).

The "trumpet pattern" junction at Strensham, where the M.5 will end for the time being and join the Ross Motorway extension, is now being built, with a single-span reinforced concrete bridge carrying dual two-lane carriageways.

Excavations in Progress

On the extension to join the Ross Motorway, excavations for the route are still in progress; and the Twynings-Strensham road is carried across on a new reinforced concrete four-span bridge.

Main contractors for the northern section of M.5 are A. Monk and Co., Ltd., and Worcestershire County Council is acting as agent authority for the Minister of Transport. The section of the motorway southwards from Strensham to Bristol is now in the preliminary planning stage.

FOR THE DIARY.

Sept. 12

Meeting of the Mid-Southern branch of the Contractors' Mechanical Plant Engineers, Calcot Golf Club, Bath Road, near Reading. 7.30 p.m. "Plant Insurance," by T. Kemp.

Sept. 13

Meeting of Glasgow branch of the Contractors' Mechanical Plant Engineers, More's Hotel, India Street, Glasgow. 7.30 p.m. Film show and social evening.

Sept. 18

International Conference on Timber Engineering at Southampton University. Sept. 18-23.

Sept. 19

Association of Public Health Inspectors' Annual Conference and Exhibition, Bournemouth. Sept. 19-22.

Sept. 21

Meeting of the Yorkshire branch of the Contractors' Mechanical Plant Engineers. Visit to Thrusscross Reservoir.

Sept. 26

Western branch of the Contractors' Mechanical Plant Engineers. Supper dance at Ashton Court County Club.

Ninth annual residential study course of the Institution of Municipal Engineers—South-Western District, at Dillingham House, Ilminster, Somerset. Sept. 26-28.

Heating, Ventilating and Air Conditioning Exhibition, Olympia, London. Sept. 26-Oct. 6.

Sept. 27

Meeting of the South Wales branch of the Contractors' Mechanical Plant Engineers, Dunraven Arms Hotel, Bridgend. 7.30 p.m.

Sept. 28

Meeting of Sheffield branch of the Institution of Plant Engineers, Grand Hotel, Sheffield. 7.30 p.m. "Industrial Relations" by W. Carron, president, Amalgamated Engineering Union.

Sept. 29

Meeting of the Birmingham branch of the Institution of Plant Engineers, Imperial Hotel, Birmingham. 7.30 p.m. "The Planning, Application and Maintenance of Industrial Lighting" by V. Heydon, manager, Lighting Division, G.E.C.

Sept. 29-30

Plant exhibition and demonstration arranged by the North West branch of the Contractors' Mechanical Plant Engineers, Territorial Army Test Ground, Aigburth, Liverpool.

Oct. 2

Annual dinner of the Scottish branch of the Institution of Highway Engineers at

the Grosvenor Restaurant, Glasgow. Reception 6.30 p.m.

Oct. 3

Conference of the Association of Public Lighting Engineers, Scarborough. Oct. 3-6. Meeting of the Manchester and District branch of the Contractors' Mechanical Plant Engineers, Woodcourt Hotel, Brooklands Road, Sale. 7.30 p.m.

Oct. 4

International Design Congress to be held by the Council of Industrial Design at the Royal Society of Arts, London. Oct. 4-5.

Annual conference and exhibition of the National Society for Clean Air, Dome, Brighton. October 4-6.

Oct. 5

Meeting of the London branch of the Contractors' Mechanical Plant Engineers, Hendon Way Hotel, Hendon Way, N.W.4. 7.30 p.m.

Convention on "Planning for Traffic" arranged by the Institution of Municipal Engineers, London.

Meeting of the Institution of Structural Engineers, London. Presidential Address.

Oct. 9

Annual conference of the Institute of Quarrying, Palace Hotel, Torquay. Oct. 9-13.

Meeting of the Yorkshire branch of the Contractors' Mechanical Plant Engineers. Ladies' Night.

Oct. 10

Annual dinner of the Contractors' Plant Association, Dorchester Hotel, London.

Meeting of Manchester branch of the Institution of Plant Engineers, Manchester Literary and Philosophical Society's Rooms, George Street, 7.15 p.m. "The Trends and Progress of Nuclear Power Station Design," by W.G. Busbridge, United Kingdom Atomic Energy Authority.

Oct. 11

Meeting of the Glasgow branch of the Contractors' Mechanical Plant Engineers, More's Hotel, Glasgow.

Oct. 18

Forty-sixth International Motor Exhibition, Earls Court, London. Oct. 18-28.

Oct. 19

Annual dinner of the Institution of Mechanical Engineers, Dorchester Hotel, London.

Oct. 20

Annual dinner of the Yorkshire Federation of Building Trades Employers, Queens Hotel, Leeds.

Autumn general meeting of the Southern Counties Federation of Building Trades Employers, Connaught Rooms, London. 10.30 a.m.

Annual dinner of the Merseyside and North Wales branch of the Institution of Plant Engineers, The Blossoms, Chester.

Oct. 25

Meeting of the Institution of Mechanical Engineers, 1 Birdcage Walk, Westminster, London, S.W.1. Presidential Address.

National Conference of the Town and Country Planning Association, Church House, Westminster. "Inquiry into Planning," Oct. 25-26.

Oct. 27

Meeting of the Birmingham branch of the Institution of Plant Engineers, Imperial Hotel, Birmingham. 7.30 p.m. "High Pressure Hot Water Heating," by P. Marshall and K. J. Luntley.

Oct. 31

Annual dinner of the British Road Tax Association, Grosvenor House, London.

Meeting of the London branch of the Institution of Plant Engineers, Royal Society of Arts, 7 p.m. "Tower Cranes—Their Use in Multi-storey Construction," by A. G. Stone.

Nov. 1

Annual dinner and dance of the Federation of Registered House-Builders at the May Fair Hotel, London, W.1.

Nov. 2

Meeting of the London branch of the Contractors' Mechanical Plant Engineers, Hendon Way Hotel, Hendon Way, N.W.4. 7.30 p.m.

The House-Builders Conference at the Connaught Rooms, London, W.C.2.

Nov. 3

Annual dinner of Mid-Southern branch of the Contractors' Mechanical Plant Engineers, Red Lion Hotel, Henley-on-Thames, 7.30 p.m.

Nov. 7

Meeting of the Manchester and District branch of the Contractors' Mechanical Plant Engineers, Woodcourt Hotel, Brooklands Road, Sale. 7.30 p.m.

Institution of Civil Engineers, London. Presidential Address.

Nov. 10

Scottish Motor Exhibition, Kelvin Hall, Glasgow. Nov. 10-18.

Dinner dance of the Yorkshire branch of the Contractor's Mechanical Plant Engineers.

Nov. 13

Factory Equipment, Heating, Ventilation and Thermal Insulation Exhibition, Earls Court, London. Nov. 13-18.

Annual dinner of the Lighthouse Club, Grosvenor House, London.

Nov. 15

Building Exhibition, Olympia, London. Nov. 15-29.

Nov. 21

Annual banquet of the National Federation of Roofing Contractors, Grosvenor House, London.

Nov. 22

Annual general meeting of the National Federation of Roofing Contractors, London.

Nov. 25

Annual dinner of London branch of the Institution of Plant Engineers, Waldorf Hotel, London.

Nov. 28

Mid-Southern branch of the Contractors' Mechanical Plant Engineers, Brains Trust, Grosvenor Hotel, Caversham, Reading.

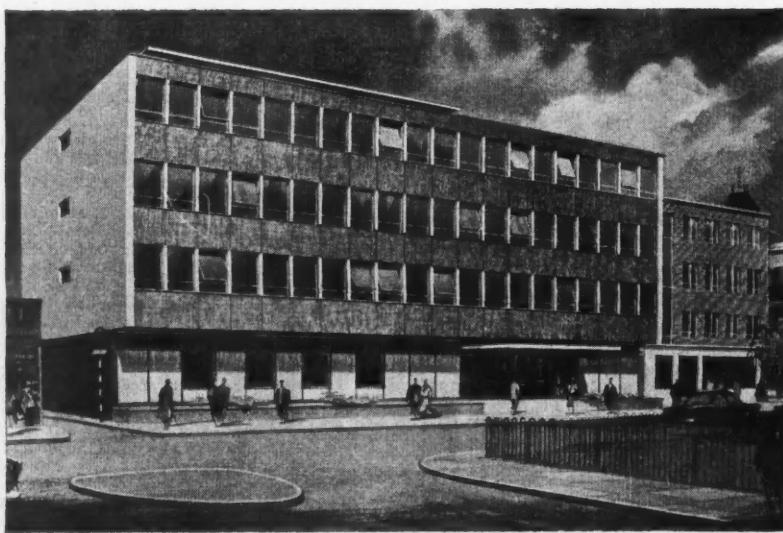
Nov. 29

Conference on "Oil Hydraulic Power Transmission and Control" at the Institution of Mechanical Engineers, 1 Birdcage Walk, London, S.W.1. Nov. 29-30.

Nov. 30

Annual dinner and dance of the Institution of Water Engineers, Park Lane Hotel, London.

Annual dinner and dance of the Derbyshire branch of the Contractors' Mechanical Plant Engineers, Victoria Restaurant, Chesterfield.



An artist's impression of the new national headquarters building of the Working Men's Club and Institute Union, which is now being erected in Upper Street, Islington, London, N.1, by John Laing Construction, Ltd. Of four storeys, with a basement car park and single storey assembly hall, the building has been designed in the offices of the contractors' chief architect and chief civil engineer. Completion is scheduled for March, 1962.

REDEVELOPMENT OF BETHNAL GREEN SLUM AREA

£1½m. Contract For 15-Acre Site

WORK has commenced on a scheme to rehouse 2,000 people in multi-storey blocks on a 15-acre slum clearance redevelopment site at Cranbrook Street, for Bethnal Green Borough Council.

The site is bounded by Roman Road, Old Ford Road, Bonner Street and the Grand Union Canal wharves, and the scheme will eventually comprise 606 dwellings in houses and in flats ranging from one to 15 storeys at a density of 136 persons to the acre.

The present contract consists of 530 dwellings in two 15-storey, two 13-storey and two 11-storey blocks of flats, one five-storey block of shops and maisonettes, five four-storey blocks of maisonettes, one two-storey and one one-storey block of old people's flats and three blocks of garages.

Tower Blocks

Six tower blocks each have a basic construction of four internal reinforced concrete walls running straight through the block. The two central walls are designed to form a lozenge-shaped hall 17ft. 4in. at the centre tapering to 3ft. 8in. at each end, and lift shafts are formed by two reinforced concrete walls projecting from each side of the hall to meet the two outer structural walls. The accommodation is formed by three lateral reinforced concrete walls projecting on each side from the outer structural walls to the external face. To act as stiffeners there are 11½in. square reinforced concrete columns in each corner of the building.

Each end of the lozenge-shaped hall is formed by a staircase, one of which, leading from the main entrance hall and approached by ramps, is surrounded by a plate glass wall. The other staircase is enclosed. To meet fire regulations the central hall is broken at every other floor

level by solid concrete floors and by half floors at the intervening floor levels.

Old people's flats are of traditional brick cross-wall construction with timbered truss roofs covered with aluminium sheeting.

The tower blocks are finished with a staggered arrangement of brickwork panels to form a lattice work effect, with the inset spaces between finished with frost-proof tiles and coloured glass alternately in 2ft. panels. The same pattern, on a smaller scale is repeated on the smaller blocks.

Each tower block has an identical internal plan. The semi-basement is taken up with tenants' stores and refuse disposal, and the ground floor, which is raised above external ground level, consists of the main entrance hall and four bed-sitting room units. The remainder of the floors each consist of four two-bedroomed flats, the top floor in each of the tower blocks being occupied by four one-bedroomed flats.

The five-storey block consists of ground floor shops, two bed-sitters, 40 one-bedroomed flats and six two-bedroomed flats. The four-storey blocks each contain 20 three-bedroomed maisonettes. Two of the blocks contain eight one-bedroomed flats and the other three blocks contain eight bed-sitting rooms. The old people's blocks consist of one-bedroomed flats, and five bed-sitting rooms.

Walls are finished throughout with plaster and the floors with tiles. In the maisonettes a glass screen room divider provides a serving hatch from the kitchen to the dining area.

Each flat in the tall blocks has its own private balcony recessed into the corner of the block to give the maximum amount of privacy.

The six tower blocks are each served by two high-speed passenger lifts running at 150ft. per minute. Lifts stop at

alternate floors, but in such a way that each floor is served directly.

Refuse disposal is by means of chutes to large Paladin bins in the semi-basement.

Heating for the entire development, except for the five-storey block on Roman Road, is provided by radiators from a central oil-fired boiler house in one of the 15-storey blocks. This block also houses a booster pump for the water supply. The five-storey block in Roman Road has electric underfloor heating.

When completed the site will be fully landscaped, and areas around the blocks will be turfed, and laid out with flower beds and rock gardens. Tree-lined avenues running diagonally across the site will be edged with rock gardens. Small paved areas are placed throughout the development as meeting and resting places, and special play areas have been set aside for the young children.

Pedestrians and vehicular traffic will be segregated throughout the site.

Consultants and Contractors

Skinner and Bailey, 74 Queensway, London, W.2, are the architects for the scheme, and the consulting engineers are Clarke Nicholls and Marcel, 21 Westbourne Grove, W.2. Veale and Sanders, 19 Hanover Square, W.1, are the quantity surveyors.

The contract is valued at £1,625,861, and is expected to be completed towards the end of 1963. Wates, Ltd., 1268 London Road, London, S.W.16, are the contractors.

DARLINGTON BY-PASS

Tenders Invited For Two Bridges

Mr. Ernest Marples, Minister of Transport, has it was announced last week, authorised Durham County Council, acting as his agents, to invite tenders for the construction of two bridges on the route of the 10-mile Darlington By-pass. (The official advertisement inviting tenders was published in *The Contract Journal* of August 31 and also appears on page 1157 of this issue.)

This By-pass will run between Kneeton Corner, in the North Riding of Yorkshire, and Aycliffe in County Durham, and will form part of the future 31-mile long Durham Motorway.

The bridges are those over the River Tees, north of Cleasby, and over the Darlington-Barnard Castle railway line near the village of Archdeacon Newton, in Durham. It is proposed to start work on these bridges in advance of the roadworks, so as to give improved access along the route for road construction machinery and other equipment.

Reinforced and Prestressed

The River Tees bridge will be of reinforced and pre-stressed concrete, supported on piles. It will have three spans with a centre span of 96ft.

The Archdeacon Newton railway bridge will be a 29ft. single span structure of reinforced concrete.

The bridges have been designed for the Ministry of Transport by the agent authority, Durham County Council (County Surveyor—Mr. W. H. B. Cotton, M.Inst.C.E., M.Inst.Mun.E.).

DESIGNING FOR THE DISABLED

The Building Exhibition in association with the Polio Research Fund is sponsoring this year at Olympia a symposium on "Design needs of the disabled." In this, architects, doctors, builders and contractors will be invited to examine this subject and see if its rate of progress cannot be speeded up.

A great deal of research has been done and it is hoped that the symposium will make information more widely available as well as co-ordinating existing knowledge on the subject.

In conjunction with the symposium, The Building Exhibition organisers are designing an exhibition stand in which tangible examples of ways of helping the disabled will be shown.



Case W9 4-wheel drive shovel operating on M.6 near Newcastle-under-Lyme

International Construction

MAJOR IMPROVEMENT AT MONROVIA FREE PORT LIBERIA

Contract Placed with Raymond International

WORK commenced recently on the construction of a further major improvement at the Free Port of Monrovia, in Liberia. The new facility, an 855ft. finger pier, will be utilised by Liberia Mining Company in shipping to world steel markets high-grade iron ore dug from extensive deposits in the Bomi Hills mines just 43 miles inland.

The contract for the construction of the pier—and twelve dolphins—was signed in New York recently by Vice-Admiral George Wauchope, U.S.N.R. (Retd.) president of the Monrovia Port Management Company which operates the port as managing agent for the Government of Liberia and by Mr. John A. Guissinger, vice-president of Raymond International Liberia, Ltd., the contractors.

The pier will accommodate vessels of up to 35ft. draft and will give the port one of the most modern and efficient ore-loading facilities in the world. There will be a maximum loading capacity of approximately 2,500 long-tons of natural fines and concentrates per hour, or 1,690 long-tons of lump per hour. Loading will be carried out from either side of the pier and will greatly speed up shipment operations now done from the existing Liberia Mining Company wharf.

By shifting the ore-loading operations to the new pier, some 850ft. of wharf space will be freed for servicing dry cargo vessels. This section of the port will then be able to accommodate two additional medium size cargo vessels, or three smaller

ones and bring its total wharf length to some 2,000ft. overall.

On either side of the new pier there will be six dolphins—sunk vertically into the harbour bed to hold vessels several feet off the quay during loading. Piling for the pier will be of all-steel construction, and cathodic-protected to prevent corrosion.

The estimated cost of the new construction work is \$1,400,000 (over £1m.) and its completion is scheduled for January 1962. Raymond International will furnish all engineering and supervisory personnel, labour, tools, erection and construction machinery.

The Port Management Company and Liberia Mining Company are co-operating in the construction of the new ore-loading pier.

AUSTRALIAN RESEARCH CONGRESS

The first Australian building research congress was held recently at the Monash University.

The chairman of the executive of the Australian Scientific and Industrial Research Organisation, Dr. F. White, said that the building industry's greatest need was more research and trained minds. At present the amount of research was not enough when compared with the amount of building. The conference was attended by about 400 architects, builders, building surveyors, consulting engineers and manufacturers.

BP HOLLAND'S NEW AMSTERDAM OFFICES

Two-stage Building Programme

THE new building recently opened for BP Holland at Prederiksplein, Amsterdam, stands on the site of the old head office. For this reason, the scheme was carried out in two stages, erection and demolition being arranged to allow the staff to transfer gradually from the old buildings to sections of the new offices as they were completed.

A total of 106 concrete and 22 wooden piles were used in the foundations for the building, which is a steel and concrete

structure 12,000 cu. metres in size. The facade of the building consists of prefabricated sections of decorated concrete slabs, which are hung and anchored to the concrete skeleton.

Partition of office space has been effected with a total of 163 divisions, and lighting is by 800 fluorescent lights in the offices and 184 in the corridors. A feature of the building is the central staircase, where walls are of Venetian white glass-mosaic.

The architect for the offices was Mr. P. Zanstra.



Main entrance to the new building

£1M. FOR WEST INDIES DEVELOPMENT SCHEMES

DEVELOPMENT schemes in the West Indies will benefit by more than £1m. as a result of 12 grants made under the Colonial Development and Welfare Act during July.

Altogether, 56 grants and loans were approved during the month making available £5,096,763 for schemes to benefit Britain's overseas territories. They bring the total of Colonial Development and Welfare grants and loans approved since January 1, 1961, to £21,250,575.

Largest of the grants for the West Indies, which totalled £1,053,838, was £562,750 towards the cost of building a new general hospital in Barbados. British Guiana will receive £1m. to construct sea defence works and £90,185 for a drainage and irrigation scheme to provide cattle pasture in swamp lands to the rear of the Black Bush Polder.

The University College of The West Indies is to get £105,000 in three grants—£65,000 for an extension to the Taylor Hall of Residence, £20,000 to build two lecture theatres for the Faculty of Natural Sciences and £20,000 to buy library books. The University College Hospital of The West Indies will receive £28,983 to equip and furnish the theatre block.

Grants for Tanganyika

Tanganyika will benefit by £219,875, made up of grants of £121,875 for Native Authority Water Supplies, £57,000 for African urban housing and £41,000 for surveys and investigations in connection with water supplies.

Twelve grants, totalling £167,783, were approved during July for the Southern Cameroons. They included £32,345 for the development of education, £28,900 to improve the Victoria/Bamenda road, £20,179 for agriculture and fisheries and £19,000 for medical and health services.

Other grants include: £71,000 for developing estates for African housing in and near urban areas in Nyasaland; £70,934 towards the cost of building the Miri/Bakong Valley road in Sarawak, and £68,400 for two new Asian primary schools in Nairobi, Kenya.

INCREASE IN NUMBER OF DWELLINGS

The number of dwellings in New Zealand increased by 86,966 to 703,182 in five years between the 1956 and 1961 census, according to preliminary figures released by the Government Statistician (Mr. J. V. T. Baker). There were 616,216 dwellings recorded in the 1956 census. The increase in occupied dwellings was 71,361 or 12.46 per cent., and for uninhabited dwellings 15,605 (35.91 per cent.).

The figures for the 1961 census include 644,120 occupied (572,759 in 1956) and 59,062 uninhabited dwellings (43,457). Uninhabited dwellings include those where the occupants are absent temporarily, unoccupied dwellings, and baches (weekend or summer dwellings). There were 11,011 dwellings in the course of erection, compared with 10,462 at the 1956 census.

The average number of occupants in each occupied dwelling was 3.74 persons, compared with 3.79 in 1956.

OFFICE IN CHITTAGONG

A branch office in Chittagong, East Pakistan, has been established by Associated British Consultants, Ltd., 195 Great Portland Street, London, W.I. It will be in the charge of Mr. Raymond Durrant, A.R.I.B.A., assisted by Mr. John Bunge, B.Sc., and will undertake planning, design and supervision of construction in the area.

Associated British Consultants is a recently formed company comprising ten firms of consulting engineers, architects, town planners and quantity surveyors, established exclusively for work outside the United Kingdom.

International Construction

REINFORCED PLASTIC DOME INSTALLED AT DUTCH OBSERVATORY

Complete Structure Less Than 5 Tons

THE substitution of a reinforced plastic dome for an existing steel structure has recently been completed at the Leyden University in Holland.

Manufactured after the "hand lay-up" method, the dome's 33ft. diameter shell was divided into eighteen identical sections, all of which were laid up in the same mould. After applying a release agent to the inside of the mould, a gel-coat of Setarol SD-40 was laid to give the outside of the dome a smooth protective surface.

The main shell was built up with layers of glass fibre impregnated with Setarol 3000 polyester resin. The outer layers of the glass fibre are in the form of mats, because of their uniform surface, whilst the innermost layer is of glass fabric.

Construction and Erection

The dome was provisionally assembled in the manufacturers' yard at Utrecht, and then dismantled and transported piecemeal

to the site. There, the glass fibre sections were fastened to a frame of T-profiled steel, which, because of the light weight of the shell, did not have to be a heavy one. The joints were filled with a patching compound especially formulated to cure rapidly at low temperatures. The complete structure, which weighed less than five tons, was then lifted into position.

The precision instruments inside the dome must be protected against variations in temperature and humidity. This has been done by impregnating the outer gel-coat with a sun-reflecting aluminium pigment, and by spraying the interior with asbestos fibres. These absorb moisture in damp atmospheres and emit it into dry air, even if the observation aperture is open.

The design and manufacture of the dome was carried out by the Plastics Division of Werkspoor NV, of Utrecht, using Setarol resins manufactured by Kunstharsfabriek Synthese NV (distributed in Britain by F. W. Berk and Co., Ltd., Berk House, 8 Baker Street, W.I.).



The completed dome being installed

START ON SUPERSTRUCTURE OF \$21M. LOS ANGELES BRIDGE

A SUSPENSION bridge across the Main Channel of the port of Los Angeles is now under construction at an estimated cost of \$21 million.

Due for completion by late 1963, this high-span road bridge will connect two important areas of the harbour and City of Los Angeles—San Pedro and Terminal Island. Construction of the substructure, involving more than 200 tons of piling, concrete footings and excavation work, began last spring when Guy F. Atkinson Co. were awarded a \$2,634,040 contract.

Recently, a 5-ton hammer on a 140ft. crane made the first start on the span's superstructures. State and harbour officials watched the first of 990 steel piles hammered 30ft. to 45ft. into the ground for one of two main towers. The superstructure of the 1,500ft. centre-suspension

span bridge, which will be the third largest in California, will be completed by Kaiser Steel Corp. Kaiser's contract, amounting to \$11,373,999, entails erection of the main towers and suspension of the cables.

Four lanes of road traffic will travel over approximately 2,000ft. of Main Channel, one mile north of the present ferry service, which will be discontinued. The 185ft. vertical clearance, from bridge deck to water level, will permit the tallest ships afloat to pass under the span.

The entire structure, from end to end, will measure 6,060ft. Of this, 4,000ft. will comprise approach roadways, one making direct connection with the Harbour Freeway on the San Pedro side, and the other merging into Seaside Avenue on the Terminal Island side.

RUNWAY CONSTRUCTION IN ADEN PROTECTORATE

IN a remote and inaccessible part of the Western Aden Protectorate, three miles from the Yemen border, the 5004 Airfield Construction Squadron of the Royal Air Force are tackling one of their toughest jobs, the laying of a new 1,400yd. tarmac runway at Beihan air-strip, 120 miles north of Aden.

Perched on the edge of a plateau 4,000ft. above sea level and surrounded by black rocks, the air-strip is used by R.A.F. transport aircraft to bring up supplies for the men of the Aden Protectorate Levies who are stationed there. Because the overland journey from Aden to Beihan is impossible to heavy vehicles air transport must of necessity be the chief means of supply.

Members of No. 5004 (A.C.) Squadron live on the air-strip under canvas and work in shade temperatures of up to 115 deg. Work is frequently interrupted by blinding sandstorms sweeping over the barren plateau.

Rock for the runway is obtained from a black stone quarry 1½ miles from the air-strip. It is some of the hardest stone in the world. This is illustrated by the fact that a 10/12-ton per hour crusher can only cope with about 5 tons an hour.

The rock is drilled, blasted, quarried, crushed and laid by the airmen, assisted by a small force of locally-recruited Arab labourers. Over 450 tons of machinery and construction equipment have been flown to Beihan from Aden by Beverley aircraft of No. 84 Squadron, R.A.F. Khormaksar, and before the job is completed 300 tons of bitumen in drums must also be transported there by air.

Maintenance also provides a ticklish problem owing to dust and sand impregnating vehicles and machinery. During the two years it has served in the Arabian Peninsula No. 5004 (A.C.) Squadron has undertaken many other important jobs including the construction of a camp for British personnel serving with the Trucial Oman Scouts, a new runway at Sharjah in the Persian Gulf, and the rehabilitation of R.A.F. station Salalah after hurricane damage. Outside the Arabian Peninsula the Airfield Construction Branch maintains two other squadrons—one in Cyprus and the other in the U.K.

Formed during the war to build roads and airfields for the R.A.F., units of the Branch served with great distinction in many theatres abroad including North West Europe and the Western Desert.

£600,000 INDIAN CONTRACT FOR GAMMON

Gammon India, Ltd., a member of the Gammon Group, 202 Sloane Street, London, S.W.1, have been awarded a contract by the Mysore State for the construction of four bridges across the four tributaries of the Gangolli River on the Mangalore-Baindur Road.

The bridges will be constructed to the design of Gammons on the Freyssinet prestressed concrete system with spans of 110ft. and a total width of 36ft., supported by piers founded on concrete piling. The total length of the bridges will be 4,580ft. The contract price is approximately £600,000.

MASSEY-FERGUSONS TO BE MADE IN BRAZIL

Manufacture of Massey-Ferguson tractors in Brazil will begin shortly. The operation is being undertaken by Massey-Ferguson do Brasil, in association with the local firm of Vemag S.A. distributors of M-F products since 1946.

A factory, with a planned capacity for 400 tractors a month, has been located in the industrial area of Jaquare, Sao Paulo. The tractors will be powered by Perkins diesel engines, now being produced by Motores Perkins SA in Brazil.

Trade and Company News**NEW CODES OF PRACTICE****Bitumen Felt Roof Coverings**

ARCHITECTS, designers and roofing contractors will welcome the publication of a revised edition (CP144.101 : 1961) of the British Standard Code of Practice on "Bitumen Felt Roof Coverings" which has been prepared by a committee of specialists on behalf of the Council for Codes of Practice.

This revised edition allows for the use of a wider range of roof sub-structures including woodwool slabs, lightweight concrete, compressed strawboard slabs, asbestos decking and metal decking.

The code deals with design and construction of roofs and the preparation of surfaces on which built-up felt coverings may be laid.

In the section on design, general guidance is given on the functional requirements of built-up felt roofs, their weather resistance, durability, thermal insulation, thermal reflectivity and resistance to traffic, together with detailed information on the preparation of the various forms of sub-structures and associated details essential to the completion of a satisfactory roof. Recommendations on the correct use of expansion and movement joints are also included. The design considerations conclude with specific information on the selection of the best grades of felt roofing for particular forms of roof shapes and construction; included are schedules of types and weights of standard felts used for built-up felt roofing on both flat and pitched surfaces.

A section on method of laying and workmanship provides guidance on the essential techniques.

Included in an appendix are the standard weights of felts suitable for built-up felt roofing; they are selected from B.S.747 "Classification of Roofing Felts." There is also a table of weights and sizes of "flashings."

The code concludes with 18 illustrations of some of the typical details met with in

the forms of built-up felt roofing covered by the code. Price 7s. 6d. each.

Maintenance of electric motor control gear

A new Code of Practice (C.P.1011) on the maintenance of electric motor control gear has been published by the British Standards Institution under the authority of the Council for Codes of Practice, and should prove of great value to all concerned with the maintenance and management of electrically powered industrial plants.

The code provides guidance on those matters which experience has shown to be of major importance in keeping electric motor control gear in efficient working condition.

An important section deals with the safety of personnel operating the installation, and emphasises such important precautions as: isolation before maintenance work is carried out; the use of voltage indicators; special precautions in dealing with oil-immersed equipment; and the maintenance of earthing connections.

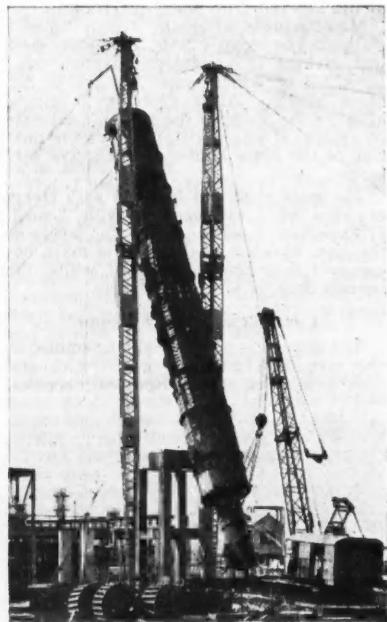
The main section of the code sets out general principles of maintenance which are applicable to most types of equipment, followed by detailed recommendations for various types of control gear such as contactors, drum controllers, overload and time-delay devices, liquid starters and controllers, push button and similar auxiliary devices, isolators and composite units of switches and fuses. There is a useful list of special equipment (other than tools normally used by the electrician) which may be needed for carrying out the recommendations of the code. Price 6s.

These codes may be obtained from the British Standards Institution, British Standards House, 2 Park Street, London, W.1 (postage will be charged extra to non-subscribers).

TALL TOWER FOR CORYTON OIL REFINERY

A STEEL Fractionating Column weighing 54 tons has been made at the Greenwich works of G. A. Harvey & Co. (London), Ltd., to the design and order of the Kellogg International Corporation for Mobil Oil's Refinery at Coryton, Essex.

The column, has a main shell 109ft. long and 10ft. in diameter. It is made of mild steel plate $\frac{3}{8}$ in. thick and has at each end a dished and flanged head, spun and formed on Harveys' Rotapress. Before



The column being raised at Coryton

leaving Greenwich the column was subjected to a hydraulic pressure test of 110lbs. per sq. in.

This Fractionating Column is the longest one fabricated by Harveys for 18 months and represents a new addition to the plant at Mobil's Coryton Refinery, where it will be used in the processing of crude oil.

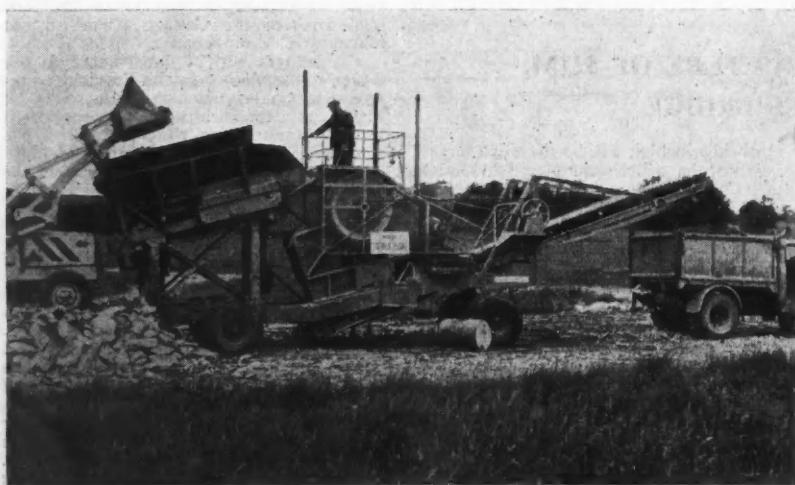
USE FOR CONCRETE FROM OLD RUNWAYS**Foundation Material for Motorway**

RUNWAYS at the former R.A.F. airfield at Defford, Worcs., are being broken up to provide A. Monk and Co., Ltd., with crushed concrete for their Bristol to Birmingham motorway contract.

The breaking up operation is being carried out by the St. Ives Sand and Gravel Co., Ltd., St. Ives, Hants., who started

dismantling aircraft runways and perimeter tracks at airfields about six years ago and are at present working about 20 airfields.

The old concrete is crushed by a Parker Rock-Ranger plant and is transported direct to the motorway where it is used as foundation material, mainly in bridge approaches and as filling to bridge abutments.



Concrete being crushed and screened by a Parker Rock-Ranger

SECOMA EQUIPMENT TO BE MADE IN U.K.

F. Taylor and Sons (Manchester), Ltd., Glazebury, Lancashire, and Richard Sutcliffe Ltd., Horbury, Wakefield, Yorkshire, have jointly secured the exclusive manufacturing and marketing rights in Great Britain and most countries of the Commonwealth of the SECORA mobile drill carriages, bolting platforms and other mobile mining, quarrying, tunnelling and public works machines mounted on crawler tracks or pneumatic tyres.

The two British companies also share non-exclusive marketing rights in many other countries of the world, excluding France and certain French speaking territories in which SECORA S.A., Villeurbanne, France, has retained the exclusive rights to manufacture and sell.

Until the British-built machines are available the markets served by these two companies will be supplied from the French factory.

NEW WATER ENGINEERING COMPANY

Combustion Chemicals, Ltd., announce the formation of a subsidiary company, under the name of Water Engineering, Ltd., 33 Dorset Square, London, N.W.1. The new company will manufacture in this country under licence the range of water clarification and purification plant marketed on the Continent by "Cie. D'épuration et de Traitement des Eaux" of Paris.

Trade and Company News**POLYESTER FINISH FOR INTERIOR AND EXTERIOR WALLS**

A WALL finish of it is claimed outstanding durability will shortly be made available in Britain. Consisting of a self-baking polyester resin, this finish is applied by brush, roller or spray and "cures" in a few hours to form a smooth, tile-like surface that is permanently keyed to the wall. Its resistance to water, chemicals, stains and contamination makes it ideal for use in hospitals, schools, food factories and laboratories.

The material is called Versalloyd, and was developed by the United States Rubber Company. It is said that its superior properties are due to it being a 100 per cent. reactive system, without solvents of any kind. The resin cures by additional polymerisation, promoted by a catalyst, and the cure proceeds uniformly through the layer. The formulation is such that the cure achieved at normal temperatures gives a hardness and durability only approached in other materials by high-temperature baking.

Complete reaction of the chemical constituents takes place during curing and once this period has elapsed, no further ageing occurs.

Versalloyd penetrates and densifies porous surfaces, forming a permanent, non-porous, waterproof seal. For

very porous surfaces, a specially formulated filler coat has been developed.

Versalloyd may be applied to masonry, concrete, plaster, stucco, cement, asbestos, breeze and other surfaces. Nine colours are available.

The material will be offered in 5-gallon drums through the exclusive agents, Lloyd's Packing Warehouses (Holdings) Limited, New Barns Works, South Langworthy Road, Salford.



Applying filler coat to cinder block wall to give smooth base surface

STONE FIRMS' EXHIBITION EXPERIMENT

As an incentive to the design draughtsmen on their staff, The Stone Firms, Ltd., recently held an internal competition for the design of their Building Exhibition stand.

All The Stone Firms' employees were circularised with details and over 40 applications were received.

The judging took place at Bath, and the judging panel headed by Mr. J. G. Wilkinson, A.M.T.P.I., A.R.I.B.A., Bath City Planning Officer and Architect, unanimously awarded the prize of £50 to Martin Partridge.

Mr. Partridge incidentally is a grandson of the South Western Stone Company's former manager and director, Mr. Fred Partridge, who was largely responsible for negotiating some 30 years ago South Western's Portland stone interests; and now with the recent merger between South Western Stone Company and Bath and Portland, Martin Partridge is a member of The Stone Firms' estimating team.

BEDFORDSHIRE PLANT SALES

To promote the sale of contractors plant and equipment in Bedfordshire, Buckinghamshire and surrounding counties, Bedfordshire Plant Sales (Cranfield), Ltd., has been formed under the managing directorship of Mr. R. J. Ambridge, with Mr. H. T. Ambridge as director.

The registered office of the company is Willow Springs, Cranfield, Bletchley, Bucks.

ELECTRICAL EQUIPMENT TRAILER

A new all-steel "Paragon" trailer by G. W. Elen and Sons, Ltd., St. George's Way, London, S.E.15, is designed specially for transporting electrical equipment. It will securely house generating or other technical apparatus, having a chassis constructed for stable riding over rough surfaces. Automatic brake equipment and regulation road ancillaries are fitted.

"INSULGLAZE": CONSTRUCTION OF THE FUTURE?

PREFABRICATED construction using wall, ceiling and roof panels made of polyester resin and polystyrene which consists of an un-interconnected closed cell material of 98 per cent. air and 2 per cent. polystyrene by volume is being planned by Parkin Engineering Land Development and Finance, Ltd., 249 East Bawtry Road, Rotherham.

In "Insulglaze" construction, as it is called, each wall, ceiling and roof becomes united and bonded to each other with the result that the finished article becomes a fully united structure similar to a stressed box.

Wall panels can come from a factory complete; a wall for a side of a house for example, with a fully glazed and painted window and door frame with door pre-hung.

The roof is formed of two flat panels with a shaped ridge and pre-moulded gutter, which is part of the eaves of the roof panel. The roof in turn is bonded with the ceiling to the main structure and becomes a part of it.

Water and gas pipes and conduit for electric cables are introduced into the wall and ceiling panels during manufacture then coupled up at given points, below floor, etc., when the house is erected. In fact, it is said the house could be pre-wired in the factory.

For external and internal finishes colour is impregnated during manufacture and it is claimed there will be no re-decorating necessary during the life of the structure.

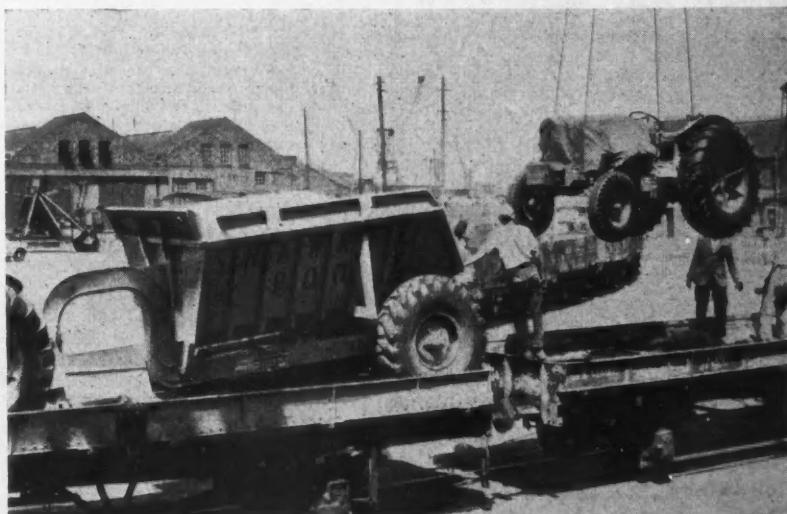
For multi-storey construction, "Insulglaze" panels are bonded on to the steel-work.

The Contract Journal understands that negotiations are proceeding with a view to the production and marketing of this material and form of construction which are fully covered by patents.

SOUND LEVEL INDICATOR

Dawe Instruments, Ltd., Harlequin Avenue, Great West Road, Brentford, Middx, have announced that they are now producing a pocket-sized sound level indicator, working completely with transistors and powered by a small 9-volt dry battery.

The indicator, the type 1408D, covers the sound level range 64 to 110dB. It employs a built-in crystal microphone and utilizes the three standard weighting curves A,B and C to I.E.C. specification. The weight is 14oz. complete with battery.



A Shawnee Poole haulage unit—one of a shipment of ten bound for Sweden—being loaded recently at Cardiff docks

Trade and Company News**NEW COMPANIES**

The undermentioned particulars of new companies recently registered are taken from the daily register compiled by Jordan and Sons, Ltd., company registration agents, 116 Chancery Lane, London, W.C.2.—

T. F. Unwin and Co., Ltd., builders. £100. Directors: Thomas F. Unwin and Dorothy G. Unwin, 36a Winton Drive, Cheshunt, Herts. J. and W. Builders, Ltd., 131a Eltham High Street, S.E.9. £100. Directors: Alec Willis and Mrs. Hylda M. Willis, 260 Durnford Road, S.W.19.

Silmar Construction, Ltd., 28 Mortimer Street, W.I., builders. £100. Director: Emil J. Fox, 11 Wolmer Gardens, Edgware, Middx. Spancrete (Southern), Ltd., Crickets Lane, Chippenham, Wilts., concrete floors and roof units. £5,000. Directors: Edward J. Pitt and Mrs. M. M. Pitt, 38 Bristol Road, Chippenham, Wilts.

Geo. Halliwell and Son, Ltd., builders. £3,000. Directors: George Halliwell and Norman Halliwell, 133 Moor Road, Orrell.

S. E. Bower and Co., Ltd., Victoria Street, Dronfield, Derbyshire, demolition contractors and builders. £10,000. Directors: Samuel E. Bower and Mrs. A. C. Bower, 5 James Andrew Crescent, Greenhill, Sheffield.

Mor-Mac, Ltd., St. George, Bristol, 5, public works contractors. £100. Directors: Percy W. J. Moore, 55 Nicholas Lane, St. George, Bristol, 5; John M. Moore, 19 Sutton Avenue, Brislington, Bristol, 4.

Stephenson (Plant), Ltd., 10-14 Hoylake Road, Wallasey, plant manufacturers and hirers. £1,000. Directors: Elsie M. Stephenson, 48 Lymington Road, Wallasey; Brenda Warren, 22 Eric Road, Wallasey; Norma Kent and Thomas N. Kent.

Thomas Gardner and Sons (Builders), 35 Dyer Street, Cirencester. £5,000. Directors: Harry E. Gardner, 58 Victoria Road, Cirencester; Arthur W. Gardner, 39 Dyer Street, Cirencester.

Bates Demolition and Building, Ltd., 6 Surrey Street, W.C.2. £100. Directors to be appointed by subscribers. Subscribers: Stanley H. Lucas and Francis A. Dean, 6 Surrey Street, W.C.2.

E. J. Streathfield and Son, Ltd., 2 Norfolk Square, Brighton, builders. £100. Directors to be appointed by subscribers. Subscribers: Shirley Hart and Avril Hart, Imperial House, Kingsway, W.C.2.

D. S. O'Brien and Co., Ltd., civil engineers. £15,000. Director: Derek S. O'Brien, 20 Olive Mount, Birkenhead.

Edwin Moss, Ltd., 35 New Broad Street, E.C.2, builders. £100. Director: Edwin J. Moss, The Hermitage, Second Avenue, Frinton-on-Sea.

John Beauchamp and Co., Ltd., builders. £1,000. Directors: John Beauchamp and

Mrs. E. Beauchamp, 55 Smugglers Lane, Highcliff, Hants.

Main Construction (Contractors), Ltd., 67 Newhall Street, Birmingham, 4, builders. £2,000. Directors: John F. Main and Mrs. E. J. Main, Tudor Lodge, Fillongley Road, Meriden, War.

R. J. Lake and Co., Ltd., contractors' plant. £100. Directors: Arthur Lake and Rose J. Lake, 26 Lingfield Avenue, Kingston, Surrey.

J. McGregor (Building Contractors), Ltd., 11 Braebridge Place, Kenton, Newcastle upon Tyne, 3. £500. Directors: Joseph McGregor, 11 Braebridge Place, Kenton, Newcastle upon Tyne, 3; Christopher R. Wood, Riding Lea, Riding Mill.

Builders and Civil Engineering (Redcar), 50 Broadway East, Redcar. £10,000. Directors: Gordon R. Brown, 50 Broadway East, Redcar; Walter Chapman, 5 Mount Pleasant, Guisborough.

Rockcem, Ltd., dealers in cement. £100. Directors: Marcus Sacks, C. T. Van Schalkwyk and Sir Francis de Guingard. Subscribers: Cavan Taylor and Graham C. M. Young, 62 London Wall, E.C.2 (clerks).

A. W. Banks Roofing, Ltd., 69 Old Broad Street, E.C.2, roofing contractors. £100. Directors: Alan W. Banks and Audrey P. Banks, 62 Tormead Road, Guildford.

Marlows (Builders), Ltd., 1 Canterbury Road, Hanworth, Middx. £100. Directors: George E. Marlow and John L. Marlow, 1 Canterbury Road, Hanworth, Middx.; Ronald G. Marlow, 10 Park Road, Sunbury-on-Thames.

Riley (Builders), Ltd. £3,000. Directors: Charles W. A. Riley, Michael I. Riley and Mrs. Patricia A. Neve, all of 280 St. Faiths Road, Old Catton, Norfolk.

South Wales Excavators, Ltd., 4 Chepstow Road, Newport, Mon. £100. Directors: Gordon I. Williams, Pondu Mill, Talgarth, Brecon.

B.M.B. Building Contractors, Ltd. £1,000. Permanent directors: George Brew, 19 Albert Road, Erdington, Birmingham; Desmond Morris, 116 Grange Lane, Four Oaks, Sutton Coldfield; John M. Brew, 34 Wheeley's Road, Edgbaston, Birmingham.

Boyland (Builders), Ltd., 869-73 Ringwood Road, West Howe, Bournemouth. £100. Directors: Leonard S. Boyland and Mrs. Murial M. Boyland, Inverlany, Mornish Road, Branksome Park, Bournemouth.

Luff Loaders, Ltd., 2 Adelaide Street, W.C.2, contractors' plant. £100. Directors: Douglas O. L. Luff and Mrs. S. M. Luff, 198 Whiby Road, Ruislip, Middx.

Ledway (Manchester), Ltd., civil engineers. £2,000. Directors: John O'Gorman, Rose Villa, Blueberry Road, Bowdon; James Beirne, 44 Brookleigh Road, Manchester, 20.

PARKINSON GROUP EXPANSION**Variety of Contracts Secured**

THE value of work in hand by the Sir Lindsay Parkinson Group at the present time is £24 million, compared with £20 million last year.

In his annual statement, the chairman, Mr. A. E. Parkinson, says: "The variety of contracts secured has again continued. Since my last statement we have been awarded by the C.E.G.B. the contract for the site preparations, river works and circulating water system for the nuclear power station at Oldbury, on the River Severn. The value of this contract is some £2½ million. We have also secured contracts for work at London Airport in excess of £1 million, and in recent weeks have been awarded by the Ministry of Transport the contract for the final section of the M.6 Birmingham-Preston motorway, valued at just below £6 million.

"Opencast coal, as a result of the decision to curtail this part of the National Coal Board's activities, was running at a lower level during 1960, but our long-term contracts continue, and our output is still on a substantial scale, particularly in the area where anthracite is produced. We have succeeded in securing employment for our displaced plant. We recently reached a total output of 21 million tons of coal."

NEW COMPANY TO LEASE PLANT**Pay-As-You-Use Venture**

Specialising in the large-scale leasing of capital equipment, plant and vehicles to British industry, a new company, called Equipment Leasing Co., Ltd., has been formed by Hambros Bank, Ltd.; Phoenix Assurance Co., Ltd.; Cable and Wireless (Holding), Ltd.; and Lease Plan International Corp., of New York.

The company will concentrate on finance leasing initially, but may well extend its activities to include maintenance of equipment and insurance, and possibly will eventually carry out contract leasing, which includes the provision of manpower.

Operations are expected to start in October, and the following technique will be used: The British customer will specify his requirements, and the necessary equipment will be purchased, usually in this country, by the leasing company; rent will be determined by the cost and the period of the lease, including the cost of management and interest charges, and the equipment will remain the property of the leasing company.

The minimum period for leasing will be in the order of two or three years, although arrangements will be extremely flexible and will depend on circumstances. Thus, the company would consider the leasing of civil engineering plant to contractors engaged on large motorway contracts.

BIG BLUE CIRCLE EXPANSION

The Blue Circle Group of Companies is facing the biggest expansion programme in its history in this country. The target is to increase output by 1,500,000 tons a year by the end of 1963.

This statement is made in a "Review of 1960" distributed by the Group to all employees and to shareholders of The Associated Portland Cement Manufacturers, Ltd., The British Portland Cement Manufacturers, Ltd., and Alpha Cement, Ltd.

Last year the Group's total cement deliveries were 10,917,533 tons which included 2,489,533 tons from works overseas in which it is interested.

Some interesting data relating to ancillary products supplied from the Group's home works during 1960 is given—408,438 tons of white and coloured cements, lime and lime-based products and whiting.

Approximately 110,788,000 bags were made at Blue Circle works—despite the fact that 40.74 per cent. of the home trade tonnage of cement was delivered in bulk for which no bags were required.

UNUSUAL TRAILERS FOR ARGENTINE OILFIELDS

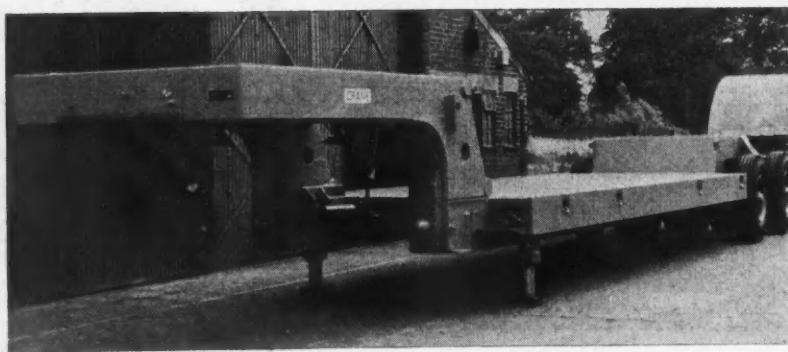
TWO 40-ton double cranked frame semi-trailers for use in the oilfields of Argentina have just been completed by Cranes (Dereham), Ltd., Norfolk.

The unusual feature of these trailers is that they have been designed so that the front crank assembly can be quickly and easily removed and the trailer loaded from the front end.

To remove the crank assembly with the

tractor coupled, the built-in hydraulic jacks are adjusted to take the weight of the trailer. The top deck is then stabilised by the support jacks on the underside. The crank and the couplings at base of same are then disconnected and the tractor, with the crank attached, can be driven away.

For ease in loading, steel ramps are provided which can be quickly placed in position.



One of the new trailers

Current Constructional Activities

PROJECTS

CONTRACTS

AWARDS

THIS editorial feature provides readers with a comprehensive news service covering forthcoming private and public construction work. Commencing on this page information is given concerning future projects followed by details of tenders being invited. In the third section will be found news of tenders recommended for acceptance, tenders accepted and contracts awarded. Attention is also drawn to the advertisements covering contracts and appointments appearing in the front part of the *Journal*.

BUILDING AND DECORATING

(See also Housing Schemes)

Accrington, Lancs.—B.C. recommended to approve, in principle, scheme for the provision of public baths; invite tenders for the provision of conveniences at the crematorium.

Ammanford, Carms.—Plans are being prepared by Saxon, Smith and Partners, architects, 2 Stanley Street, Chester, for extensions to the Technical College. Quantity surveyors are Messrs. Gleeds, 106 Regent Street, London, W.1, and mechanical consultants are R. R. Jennings and Partners, 39 Byron Street, Deansgate, Manchester, 3. Estimated cost £48,000.

Ayr.—Dean of Guild Court have approved alterations to retail shop premises in High Street, for F. W. Woolworth and Co. Ltd., Armour House, Lord Street, Liverpool. Estimated cost £100,000.

Baldon, Yorks.—U.D.C. have approved layout for new bus station in the town including two or three shops with maisonettes above, bus shelters and a clock tower in the centre.

Bakewell, Derbys.—U.D.C. recommended to approve in principle scheme for improvements at the Cattle Market.

Billingham-on-Tees, Dur.—J. Nimmo and Son, Castle Eden, Co. Durham, propose public house at Cowpen Bewley. The firm have their own architect.

Birmingham.—Finance Committee recommended to approve scheme for a lido alongside the indoor swimming baths (being built) at Stechford. Estimated cost £20,000.

Bishop Auckland, Dur.—Extensions are proposed to Lady Eden Cottage Hospital for Newcastle upon Tyne Hospital Board. Sketch plans have been prepared. P. H. Knighton, chief architect.

Blyth, Northumb.—A contract will be let at an early date for the erection of an office block for Hughes Bolckow and Co. Ltd., Battleship Wharf. The architects are Cotton, Ballard and Blow, 48 Pilgrim Street, Newcastle upon Tyne.

Bolton, Lancs.—B.C. recommended to approve the erection of College of Technology on land—to be acquired by compulsory purchase order—between Deane Road and Derby Street.

Bootle, Lancs.—Watch Committee are to submit plans to the Home Office for erection of a sub-divisional police station at corner of Dunning's Bridge Road and Park Lane, Netherton. Estimated cost £39,000.

Boston.—B.C. recommended to approve the construction of a brick building at the docks for use as a canteen. Estimated cost £2,000.

Bridlington, Yorks.—Housing Committee have approved plan for erection of a village hall in Bridlington Street, Hunmanby, for the Hunmanby Social Development Committee.

Bridlington, Yorks.—B.C. recommended to instruct the Borough Engineer to prepare detailed plans and estimates for the provision of permanent changing accommodation at the Gipsy Road playing fields.

Bristol.—Fairlanes Bowling, Ltd., 10 Park Place, London, S.W.1, propose the construction of ten-pin bowling centres in the south-east and north-west areas.

Rank Organisation, Ltd., 11 Belgrave Road, London, S.W.1, are to erect a ballroom adjoining the Odeon Cinema, Broadmead.

Burnley, Lancs.—B.C. have approved plans for erection of a new bus station adjacent to the new inner ring road. Estimated cost £128,000.

Camberwell.—L.C.C. planning approval is being sought for erection of a R.C. primary school at Barry Road, Dulwich, for which the

architects is Peter Rycroft, 49 Creffield Road, London, W.5.

Cardiff, Glam.—City Council propose the purchase of the Greyfriars site, for municipal development.

Chester.—T. Randal Hill and Partners, 4 Dial Street, Warrington, Lancs. are the quantity surveyors for the erection of a public house at Lache Lane, for Greenall Whitley, Ltd. Saxon, Smith and Partners, 2 Stanley Street, Chester, are the architects for the scheme.

Cleckheaton, Yorks.—West Riding Town and Country Planning committee have approved the erection of offices and a cold store at the junction of Northgate and Scott Lane for Eskimo Food Co., East Ardsley, Wakefield.

Dalkeith, Midlothian.—Adams (Dalkeith), Ltd., Eskbank Road, propose to erect a 12,000 sq. ft. factory at Ramsay Croft.

Darlington, Dur.—Plans are being prepared for factory additions on Aycliffe trading estate for the Industrial Estates Management Corporation. The architects are Cordingley and McIntyre, Owengate, Durham City.

Quantities are being prepared for shopping developments at the junction of Duke Street and Skinnergate, for W. Duncan, Ltd., 8 Nile Street, South Shields. The architect is C. Solomon, 30 St. Mary's Place, Newcastle upon Tyne.

Deerne, Yorks.—U.D.C. propose the erection of a modern youth centre on the welfare ground at Goldthorpe.

Doncaster, Yorks.—B.C. recommended to approve the erection of canteen and toilet block, two warehouse blocks and two sets of garages at the new wholesale fruit and vegetable market.

R.D.C. have approved the erection of a new primary school in Bungalow Hoad for West Riding C.C.

R.D.C. have approved erection of new transit warehouse for Rockware Glass, Ltd., Kirk Sandall and for extensions of stores buildings and two-storey office block at Kirk Sandall for Pilkington Brothers, Ltd.

Doncaster, Yorks.—Town Planning Committee have approved provisionally plans for erection of shops and showrooms on the Reindeer Hotel site in Hall Gate, for Town and City Properties, Ltd., Kingsbury House, King Street, London, S.W.1.

Dudley, Worcs.—M.E. have approved sketch plans for the construction of Holly Hall Secondary Modern School, Russells Hall estate, for B.C.

B.C. recommended to prepare detailed working drawings for the erection of a second-storey on the rear portion of the library building.

Dunston, Dur.—Newcombe and Newcombe, 23 Eldon Square, Newcastle upon Tyne are the architects for a new church at Dunston for St. Nicholas' Church Council.

Durham.—H. W. Taylor, Green Road, Carrville, proposes four shops, offices and flats at High Street, Carrville.

Edinburgh.—Dean of Guild Court have approved the following: erection of a fine-chemicals building beside the existing factory in Whitefield Road, Gorgie, Edinburgh, for T. and H. Smith, Ltd. Estimated cost £50,000; construction of a refining plant at West Granton Road for Scottish Gas Board, 26 Drumsheugh Gardens, Edinburgh, 3, £31,000.

Ellesmere Port, Ches.—Total Oil Products (G.B.), Ltd., Bush House, Aldwych, London, W.C.2, have submitted to B.C. for outline planning permission, scheme for the construction of an oil terminal at Stanlow. Estimated cost £250,000.

Epsom, Surrey.—North Surrey Area Planning Committee recommended to grant outline planning permission for the erection of a four-storey block of shops and offices at the Granada Cinema site, for Industrial Investment Services, Ltd., 129 Finsbury Pavement, London, E.C.2.

Farnworth, Lancs.—B.C. recommended to approve plan and invite tenders from selected contractors for the erection of Butlin Pavilion, Harper Green Playing Fields, re-invite tenders for the external painting of houses at various estates.

Frimley and Camberley, Surrey.—Co. Planning Committee have approved U.D.C.'s plans for the erection of a sports pavilion at the recreation ground adjoining Wimbledon Road and Bracknell Road, at Old Dean Common estate, Camberley.

Gelligaer, Glam.—U.D.C. have submitted to Ministry for approval and grant aid, clearance scheme for Pontlottyn, at the head of the Rhymney Valley, for the provision of a second industrial estate. Estimated cost £60,000.

Glasgow.—City Council have been recommended to ask private developers to submit schemes for the shopping and commercial centre in the Anderston Cross redevelopment area.

Boswell, Mitchell and Johnston.—256 West George Street, Glasgow, C.2 are the architects for a proposed 114 bed maternity unit at the Royal Samaritan Hospital for Women for West Regional Hospital Board. Estimated cost £560,000.

Glasgow.—Grampian Holdings, Ltd., 124 St. Vincent Street, Glasgow, C.2, propose a 20-storey, air terminal, heliport and hotel at a site in the Gorbals bounded by Ballater Street and Crown Street, St. Enoch Viaduct and the River Clyde. Estimated cost £2m. City Council have agreed in principle to the terminal.

Haydock, Lancs.—William Twist and Sons, Ltd., 5 Market Street, St. Helens, are to erect a depot in Haydock Lane on the Haydock Industrial Estate.

Hereford.—The Hammerson Group of Companies, Quadrax House, Park Lane, London, W.1, to purchase the Kemble Theatre and redevelop the site. Demolition work expected to commence next year.

Heywood, Lancs.—Charles B. Pearson and Son, architects, 24 Loxford Street, Manchester 15, are to be asked to submit an amended scheme for erection of a new civic centre on the site of the existing Church Street car park.

Hounslow, Middx.—North West Metropolitan Regional Hospital Board have approved, subject to Ministry approval, plans for extensions to the out-patient and physiotherapy departments at the General Hospital. Estimated cost £23,000.

Huddersfield.—Leeds Regional Hospital Board are to invite tenders within the next few weeks for phase 2 of the £23m. Lindley Hospital, near Huddersfield. This phase will include a second ward block, with about 285 beds, certain clinics, staff dining rooms, and a two-level car park. Tenders are expected to be invited for phase 1b in about a year's time. George, Trew and Dunn, 50 Eastbourne Terrace, London, W.2, are the architects.

Leeds.—Ministry have approved, in principle, erection of the new R.C. secondary school on the northern side of the Leeds-Bradford Road, adjoining Toad's Hole Wood, for City Council.

Leeds.—City Council to grant planning permission to Forest Products of Leeds Ltd., Yorkshire Post Buildings, Albion Street, Leeds, 1, for conversion of the Clifton Cinema, Stanningley Road, Bramley, into offices, warehouse and timber store.

Town Planning and Improvements Committee.—Have approved planning permission for redevelopment of land on South Brook Street and Crown Point Road for extensions to brewery in Hunslet Road, for Joshua Tetley and Son Ltd.

Leek, Staffs.—C.C. have approved schemes for erection of junior hostel and training centre. Estimated cost £18,087 and £16,141 respectively.

Limavady, Londonderry.—Ministry have approved a loan of £40,000 for the erection of new administrative offices for R.D.C.

Lowestoft, Suffolk.—B.C. recommended to approve the provision of a swimming pool as the first stage of the development of the South Front. Estimated cost £100,000.

Longridge, Lancs.—U.D.C. to prepare plan for the erection of a new public hall near Towneley Gardens.

Maghull, Lancs.—Co. E.C. recommended to purchase land in Damfield Lane, for the erection of the proposed Maghull R.C. Secondary School.

Manchester.—City Council have approved planning application for erection of Further Education College on site bounded by Quay Street, Young Street, Hardman Street, Water Street and New Quay Street, and for wholesale meat market, New City abattoir, Cemetery Road, Briscoe Lane, and Ten Acres Lane, Newton Heath.

Middlesbrough, Yorks.—Elder and Lester, 65 Albert Road, are the architects for a three-storey office block at Albert Road for the Temperance Permanent Building Society.

Education Architect has prepared plans for the erection of a school kitchen at Corpus Christi R.C. School to cost £5,000, and conversion of Stainsacre Hall into youth centre at a cost of £6,500.

Mirfield, Yorks.—U.D.C. have granted application for erection of a new Methodist church at Old Bank.

Morpeth, Northumb.—Tenders are under consideration for alterations to St. George's Presbyterian Church. The cost will be about £12,000 and a contract is expected to be arranged as soon as financial matters have been settled. The architect is T. Rieve, Parsonage Road, Heaton Chapel, Stockport, Cheshire.

Nelson, Lancs.—B.C. recommended to approve the erection of public conveniences near Leeds Road; public conveniences on land in Alga Street. Estimated cost £2,550.

Newcastle-under-Lyne, Staffs.—B.C. hope to commence work towards the end of the year, on the demolition of the old market buildings and market hall, Red Lion Inn and adjoining shop premises and the erection on the site of a shopping arcade with a market hall at rear. The council propose that the successful tenderer for the scheme should be offered the contract for the provision of a temporary market on site in Stubbs Street.

Newcastle upon Tyne.—A contract may be let within a few weeks for the erection of a school of agriculture at College Avenue for the Council of King's College. Plans are by W. B. Edwards and Partners, Cathedral Buildings, Dean Street, Newcastle upon Tyne.

Norwich.—Planning Committee have approved outline applications submitted by Shingler and Risdon, architects, 47 Bedford Row, London, W.C.1, for Probyn Investments, Ltd., for the redevelopment of site at Heigham Hall including a motel, ballroom, stores, shops and two 10-storey blocks of flats; and R. W. Ketton-Cremer, Felbrigg Hall, Rougham, for the redevelopment of Scarles Yard and 155-161 Queen's Road, comprising erection of office blocks and car parking facilities and blocks of flats and lock-up garages respectively.

W. A. J. Spear, architect, 36 Cattle Market Street, is preparing plans for the erection of a building at Bethel Street, for the Walpamur Co., Ltd., Darwen, Lancs.

Peterborough.—Joint Education Board have approved plans for proposed new premises for Helpston school, providing five classrooms, an assembly hall, a school meals kitchen and other accommodation and subject to Ministry approval, prepare documents so that tenders could be invited for the first instalment involving three classrooms, assembly hall and other accommodation.

Peterlee, Dur.—Industrial Estates Management Corporation, Team Valley, Gateshead, are to carry out factory additions for Alexandre, Ltd., Peterlee. No contracts have been let. The architects are J. H. Napper and Partners, 133 Osborne Road, Newcastle upon Tyne.

Ponteland, Northumb.—Alterations are proposed to Ponteland Hospital to provide accommodation for geriatric patients. Plans by P. H. Knighton, chief architect. Estimated cost £5,000.

Poole, Dorset.—B.C. are preparing plans for the erection of a branch library at Herbert Avenue.

Portadown, Armagh.—B.C. have approved a scheme for the redevelopment area lying between West Street and Woodhouse Street. Estimated cost £100,000. Plans have been lodged with the Ministry.

Potters Bar, Middx.—U.D.C. Development Committee have approved plans for the extension of Ladbrooke School by the addition of an assembly hall-dining-room, classroom, kitchen, stores, nursery classroom and toilets.

Ripley, Derby.—U.D.C. have purchased a former commercial hotel in Booth Street, for conversion into nine self-contained flats.

Rochdale, Lancs.—B.C. recommended to approve plans for the provision of offices at Woodland Road, for Turner Bros. Asbestos Co., Ltd., Spotland, Rochdale; outline application for the erection of St. Wilfrid's Secondary Modern School, for Salford R.C. Diocesan Trustees, Wardley Hall, Swinton.

Romford, Essex.—B.C. recommended to approve draft plans for the layout of shops at Leatherland estate, Harold Hill.

Rotherham, Yorks.—B.C. recommended to approve planning application submitted by the Hammerson Group of Companies, Quadrax House, Park Lane, London, W.1., for erection of a multiple store and shop in the High Street.

B.C. recommended to approve, in principle, scheme for the erection of shops and maisonettes at the Broom Valley estate.

Rothesay, Bute.—Dean of Guild Court have approved a two-storey extension to the Prince of Wales Lodge private hotel, Mount Stuart Road, Rothesay. Estimated cost £6,000.

Rothwell, Yorks.—West Riding C.C. have prepared a revised scheme for erection of a

mental health training centre. Estimated cost £4,905.

Home Office have approved the erection of a new fire station for C.C. Estimated cost £44,525.

Royston, Yorks.—Home Office have approved the erection of a new fire station for C.C. Estimated cost £51,155.

St. Helens, Lancs.—A new R. C. Church is to be erected on a site off Howards Lane, Eccleston. Work to start some time next year. Estimated cost £40,000.

Salford, Lancs.—City Council have approved planning permission for upgrading of hospital ward, block E, and new sanitary annexes at Ladywell Hospital, Eccles New Road, for Manchester Regional Hospital Board; loading bay, office and additional toilets, Ouse Street Bakery, Ouse Street/Guide Street, for Sebona Products; extension to first floor of factory, 293-295 Bury New Road, for Allbag Manufacturing Co., office and warehouse, Hope Street/West Charles Street, for H. Pace; and conversion of laboratory block and stores into new loading bay, Bridge Mill, Holland Street, for R. A. Brand and Co.

Sedgefield, Dur.—Newcastle upon Tyne Hospital Board to spend £11,000 on the second stage additions to the male staff hostel at Winterton Hospital. P. H. Knighton, chief architect.

Sheffield.—City Council propose, subject to Home Office approval, the erection of a new remand home for girls in Limb Lane, Dore.

Shipley, Yorks.—Metal Box Co. are to erect new machinery building on Shipley's new industrial estate at Dockfield.

Sodbury, Glos.—R.D.C. have approved prison commissioners' plans for a remand centre on the site of R.A.F. Pucklechurch.

Somerset.—Ministry have approved C.C.'s scheme for conversion of Kilve Court into a residential youth centre. Estimated cost £26,000.

South Shields.—Sketch plans have been prepared for sanitary annexes at Ingham Infirmary for Newcastle Regional Hospital Board. The Board's chief architect, is P. H. Knighton. Estimated cost £7,000.

Spennymoor, Dur.—Factory additions are proposed for the Industrial Estates Management Corporation, Team Valley, Gateshead. The architect is C. S. Errington, 46 Grainger Street, Newcastle upon Tyne.

Sunderland.—E.C. to build two youth centres costing £40,000 each. The first will be built in 1962-63 and the other in the following year. The Committee proposes a special school at Redcar Road.

S. W. Milburn and Partners, 9 Esplanade, are the architects for sales depot at West Wear Street and Charles Street for Associated Engineering (Sales), Ltd., 11 Gallowgate, Newcastle upon Tyne.

B.C. to reconsider the proposed site at Mowbray Park for a civic centre.

Tynemouth, Northumb.—A contract is expected to be decided later this year for the erection of an office block for Smith's Dock Co., Ltd., North Shields. W. B. Edwards and Partners, architects, Cathedral Buildings, Dean Street, Newcastle upon Tyne. Estimated cost £30,000.

Wells-next-the-Sea, Norfolk.—Public Health Committee have approved in principle, outline application by Bullard and Sons, Ltd., Anchor Brewery, Norwich, to erect a new hotel on site of Ship Inn and adjoining property at Quayside; erection of police station and three police houses at Polka Road, for C.C.

Whitley Bay, Northumb.—H. S. Botham, Monkseaton Drive, is seeking planning approval for the erection of garage, workshop, showrooms and filling station at Hill Heads Road.

John T. Bell and Sons, Market Street, Newcastle upon Tyne, are negotiating for the purchase of land at Hill Heads Road. It has not yet been announced what the firm's plans are for the land.

Widenean, Northumb.—Quantities have been prepared and tenders are to be obtained for the erection of a Presbyterian Church. The architects are Tasker and Partners, 25 New Bridge Street, Newcastle upon Tyne.

Stockport, Ches.—B.C. have approved outline application for the erection of an industrial building at Newbridge Lane, for Cornbrook Chemical Co., Ltd., Millgate, Stockport.

Stoke-on-Trent, Staffs.—Ian Fraser and Associates, 15 Bedford Square, London, W.C.2, are the architects, for the construction of a shopping centre at Longton, for Town and City Properties, Ltd. L. G. Dight, 35 Portland Place, London, W.1, is the quantity surveyor and J. C. Bianco, 239 Shaftesbury Avenue, London, W.C.2, the consulting engineer for the scheme. Estimated cost £500,000.

Stoke-on-Trent, Staffs.—City Council recommended to apply for sanction to borrow

£65,207 for the erection of Trentham/Hanford C. of E. Junior School; submit to Ministry for approval, scheme for a health services clinic at Saracans Way, Meir; prepare preliminary plans for an ambulance station at Milton Road/ Newcastle Lane, Harpfields and plans for provision of children's toilet in the play area at Stansmore Road recreation ground, tennis pavilion, etc., at Queen's Park, Longton and improvements to Longton, Fenton and Stoke police stations; prepare for submission to Ministry scheme for a hostel for adult mental defectives at Raymond Street, Hanley and junior training centre at Chell Heath Road, Chell Heath. Estimated cost £34,500 and £76,000 respectively.

Street, Som.—U.D.C. have approved plans for the erection of a new police station at West End, for C.C.

Uxbridge, Middx.—North West Metropolitan Regional Hospital Board have approved the provision of a dayroom between blocks B. and C. at St. John's Hospital. Estimated cost £1,777.

Wanstead and Woodford, Essex.—Ministry have approved site at junction of Sydney Road and High Road, Woodford Green for the erection of the new St. Pauls Roman Catholic School.

Warwickshire.—C.C. have approved plans for the erection of a Council office block at rear of the Shire Hall, Warwick. Work is expected to commence in May. Estimated cost £445,000.

Watford, Herts.—North West Metropolitan Regional Hospital Board have approved scheme for the improvement of the present pathological laboratory at the Watford Peace Memorial Hospital. Estimated cost £10,000.

West Ashford, Kent.—R.D.C. have approved C.C.'s plans for the erection of a home for disabled children at the Stanhope School site. Estimated cost £24,500.

Wigan, Lancs.—E.C. to acquire land for enlarging the existing site of St. Andrew's School, Springfield. Planning Committee have approved plan for the redevelopment of a large area of land at Wallgate for industrial purposes.

Wigan, Lancs.—Wigan R.F.C. have been granted permission to erect a pavilion at Coronation Park.

Wigan Methodist Circuit have purchased land off Gathurst Lane, Shevington, for new Methodist Church. Plans not yet prepared.

Wimbledon, Surrey.—Co. Planning Committee have approved B.C.'s plans for the erection of 10 lock-up garages at Havelock housing estate.

Worcester.—City Council recommended to submit to Ministry for approval, in principle, scheme for additional dining accommodation at Hillborough. Estimated cost £3,600.

DEMOLITION

Boston, Lincs.—B.C. recommended to approve the demolition of the disused chapel at the Cemetery. Estimated cost £150.

Edinburgh.—Dean of Guild Court have approved the demolition of the old tramway depot and surrounding houses in Portobello High Street for City Council. The site is expected to form part of a new housing development.

ELECTRICAL

Durham.—Newcastle upon Tyne Hospital Board are to spend £5,000 on a new lift at Crossgate Hospital, Durham City. P. H. Knighton, chief architect.

Southampton.—Central Electricity Generating Board to apply to the Ministry of Power and local planning authority for permission to establish an oil-burning power station at Fawley on Southampton Water.

Watford, Herts.—North West Metropolitan Regional Hospital Board have approved additional electrical intake services at Shrodes Hospital. Estimated cost £7,500.

FENCING

Bootle, Lancs.—Borough Engineer has been authorised to erect concrete fencing at rear of the Netherton shopping centre. Estimated cost £680.

GAS AND WATER SUPPLY

Nottingham.—City Council to invite tenders shortly for the sinking of three permanent boreholes at Ompton pumping station.

Scarborough, Yorks.—B.C. recommended to ask Water Engineer to prepare plans, etc. for laying a new water main from Randymere reservoir to Whitby.

Stafford.—B.C. have applied to Ministry for a licence to sink an experimental bore hole in Shugborough Park near the Essex Bridge. Estimated cost between £3,000 and £6,000.

Wigan, Lancs.—Makrfield Water Board have approved the re-laying of the three-inch water main at Shevington by a six-inch main. Estimated cost £1,100.

HARBOURS, PIERS AND SEA DEFENCE WORKS

Lowestoft, Suffolk.—B.C. recommended to submit to Ministry for grant aid, scheme for sea-piling along a section of the North Sea Wall. Estimated cost £15,000.

HOUSING SCHEMES

Abingdon, Berks.—C.C. have approved R.D.C.'s. scheme for the erection of eight houses and eight flats at Appleton.

Ampthill, Beds.—U.D.C. have received outline planning permission for the erection of a dwelling in the garden of Gas Works House and one or two dwellings in the orchard of the Corner House, Gas Works Lane.

Barnsley, Yorks.—B.C. have approved the erection of old people's bungalow homes at Monk Bretton.

Barnstaple, Devon.—Broadfield Securities Ltd., have purchased land at Bishopstowton for development as a new housing estate. Architect for the scheme is Reginald L. W. Gale, High Street, Barnstaple.

Barrow-in-Furness, Lancs.—B.C. recommended to approve amended layout drawings for the erection of 10 garages in conjunction with the bungalows at the rear of Ramsgate Crescent.

Basford, Notts.—R.D.C. propose, subject to Ministry approval, the erection of 17 old people's bungalows at East Leake and 17 at Woodborough.

Basingstoke, Hants.—North East Hampshire Area Planning Committee have granted B.C. planning permission to erect four blocks of 20 three-bedroomed maisonettes (four storeys) at South Ham.

Birmingham.—City Architect has prepared plans for 77 dwellings and 79 garages at corner of Genners Lane and Field Lane, including bungalows, houses, one block of nine-storey and two six-storey blocks of flats. It is hoped to commence work on site late this year or early next year.

Bishop Auckland, Dur.—G. McCall, Ltd., New Herrington Co., Durham, are seeking permission to erect 24 houses at Church Street, Coundon.

Bishop Auckland, Dur.—U.D.C. propose the erection of 28 aged persons' bungalows near West Auckland railway station.

Blackburn, Lancs.—Housing Committee to consider layout plan for a new estate of up to 600 houses on a site between Gib Lane and Heys Lane.

Bolton, Lancs.—B.C. have no objections to C.C.'s proposal for residential development at New Brook Road and Stinch-Mi-Lane.

Bullring, Oxon.—B.C. to prepare layout plans for two one-bedroom bungalows at Warborough.

Cheadle, Staffs.—R.D.C. recommended to erect 12 old people's bungalows at Forsbrook.

Dartford, Kent.—Ministry have approved R.D.C.'s. scheme for the demolition of 41-59 Milestone Road, Stone, and erection on site of approximately six flats in a three-storey block. Outline planning permission has been received for the flats.

Dundee.—Ian Burke, Martin and Partners, Tay Street, Dundee, are the architects for the redevelopment of 15 acres in the Hilltown area for City Council. The scheme of 600 houses, shops, stores, community centre, lock-ups, play spaces, etc., include four 24-storey blocks of flats. Estimated cost £2m. Tenders are expected to be invited in about six months.

Edinburgh.—James Miller and Partners Ltd., 18 George Street, Edinburgh propose eleven houses at Fox Spring Rise, Colinton. Estimated cost £32,083.

Edinburgh.—Housing Committee have approved a scheme to provide 1,100 houses in St. Leonards (Arthur Street) area, for City Council. The plans include five 25-storey blocks of flats with intermediate blocks, shopping and neighbourhood centre, children's play areas and car parks.

Farnworth, Lancs.—B.C. recommended to authorise Unity Structures, Ltd., 5 Cromer Street, London, W.C.1, to prepare plans for the erection of 32 one-bedroom bungalows and 48 two-bedroom bungalows at Harper Green.

Forehoe and Henstead, Norfolk.—R.D.C. to submit to Ministry for approval, scheme for the erection of 45 dwellings for slum clearance during 1962.

Hambledon, Surrey.—R.D.C. to apply for sanction to borrow £109,000 for the purchase of land at Wanborough Lane, Cranleigh, for housing purposes.

Ham, Surrey.—Co. Planning Committee have approved outline application submitted by Wates, Ltd., 1258 London Road, London, S.W.16, for development of 30 acres of River-side land, for housing purposes.

Harrogate, Yorks.—Park Place (Harrogate), Ltd., are to invite tenders in about a fortnight from selected contractors for erection of 12-storey blocks of luxury flats at Park Place. The cost of the first two phases of the scheme, providing for 200 dwellings, will be about

£750,000. Plans are by Morris de Metz, 29 Gloucester Place, London, W.1, with James Cubitt and Partners, 25 Gloucester Place, London, W.1, acting as consulting architects for layout and elevations.

Hayes, Middx.—Theo H. Birks, 38 Portland Place, London, W.1, is the architect for the erection of residential property at Uxbridge/Springfield roads, for Groveway Properties, Ltd., Cyril Sweett and Partner, 37 Bedford Row, London, W.C.1, are the quantity surveyors and Clarke, Nicholls and Marcel, 21 Westborne Grove, London, W.2, consulting engineers. Estimated cost £350,000.

Jarrow, Dur.—B.C. planning further housing developments in the Boldon overspill area. Plans include 207 houses, 19 bungalows, and 72 flats. No contracts let.

Leek, Staffs.—U.D.C. have approved, subject to Co. Planning approval, the erection of four houses at Compton estate and one bungalow at junction of East Street and Springfield Road.

Lexden and Winstree, Essex.—R.D.C. have approved layout plans for 37 houses at Tiptree and 38 at Marks Tey.

Maidenhead, Berks.—B.C. recommended to approve detailed plans for the erection of 36 flats and maisonettes in five three-storey blocks, with 36 garages at Calder Lodge site, Gringer Hill, for G. and M. Construction, Ltd., 426 Harrow Road, London, W.9.

Manchester.—City Council to negotiate with F. Gannon and Son (Manchester), Ltd., for erection of 44 dwellings at Muthurst Road, Merton.

Housing Committee have approved appointment of Eaton and Edwards, quantity surveyors, 134 Deansgate, Manchester, 3, to prepare Bills of quantities for maisonettes and aged persons' dwellings.

Town planning applications approved for Seven blocks of 12-storey flats, with 58 dwellings in each block, Blackley New Road, Blackley; 29 houses, 10 two-storey old people's dwellings, eight aged persons' bungalows and 48 four-storey maisonettes (total 95 dwellings). Ferndown Road and Altringham Road, Brooklands; revised plan of redevelopment area layout, Collyhurst Street and Rochdale Road, Collyhurst; revision to block positions of four-storey maisonettes, blocks 6 and 9 (28 dwellings) Ridgway Street and Bradford Road, Ancoats; and reinforced concrete floor and balcony details to flats and houses, Ossington Walk and Southwick Road, Northern Moor.

Morpeth, Northumb.—R.D.C. have approved scheme for the erection of three aged persons' bungalows and 12 houses at Longhorsley.

Oswaldtwistle, Lancs.—U.D.C. recommended to approve the erection of 150 houses, between Aspen Lane and Thwaites Road, for Davies Bros., Ruskin Drive, Morecambe.

Ploughley, Oxon.—R.D.C. have received planning approval for the erection of six houses at Piddington and four bungalows at Souldern, approved plans for eight two-bedroom houses and four bungalows at Islip. **Rhyl, Flints.**—U.D.C. plan the erection of 17 flats at Warren Road, Stanmore Street and West Street.

Saffron Walden, Essex.—B.C. recommended to invite selected contractors to submit design plans and tenders for the erection of 42 houses at Rowntree Way estate.

Sodbury, Glos.—R.D.C. have approved a housing scheme for Church site, Filton.

Stockport, Cheshire.—B.C. have approved in principle the erection of aged persons' bungalows along the front of proposed Brinington Park in Northumberland Road; are to negotiate tender with Moston Brick and Building Co., Ltd., for the construction of an additional eight dwellings at Canal Bridge estate, contract 7.

Weston-super-Mare, Som.—B.C. recommended to approve plans for the conversion of Cairo Hotel, Manilla Crescent, into 10 flats.

Whickham, Dur.—J. H. James and Son, Archer Street, Wallsend, propose 46 houses at Dunston Road, Dunston, to plans by W. Stockdale, 73 Howard Street, North Shields.

PLAYING FIELDS, PARKS, ETC.

Esher, Surrey.—U.D.C. propose, subject to Ministry approval, the conversion of allotment land off Lynwood Road, Hinchley Wood, into a children's playground.

RIVER AND FLOOD PREVENTION WORKS

Essex.—River Board are to carry out by direct labour the construction of concrete flumes for the gauging of river flows at various sites.

ROADS, BRIDGES AND SITE WORKS

Accrington, Lancs.—Borough Engineer to be instructed to prepare a scheme and estimate for the extension of the service road adjoining Burnley Road to the end of the existing

development, for consideration in connection with the estimates for the financial year, 1962/63.

Bolton, Lancs.—B.C. recommended to invite tenders for private street works in Albert Road West and Union Road.

Hartley Wintney, Staffs.—R.D.C. to prepare plans for improvement of the access road leading to housing estate at North Warnborough.

Monmouthshire.—C.C. to invite tenders this autumn for the construction of a dual carriageway road between the boundary and Dixton Cross, to follow the general line of the existing Ross-Monmouth trunk road (A.40), comprising the third stage of the Wye Valley Road Improvement Scheme. Estimated cost £24m.

Newtownabbey, Antrim.—U.D.C. propose the widening of a 300 yard long section of the North Circular Road. Estimated cost £16,000.

Northamptonshire.—C.C. expect to start work in November on widening the A.45 between Little Irchester level crossing and Turnells Hill. Estimated cost £75,000.

Royston, Herts.—U.D.C. recommended to approve, subject to Ministry approval, scheme for the improvement of Mill Road at the rear of the White Bear public house.

Tonbridge, Kent.—R.D.C. propose the acquisition of land at Paddock Wood for the construction of a car park.

Wallasey, Cheshire.—B.C. to commence work during the next few months on the widening of Wallasey Village between Leasowe Road and Sandy Lane. Estimated cost £36,000.

West Bromwich, Staffs.—B.C. recommended to submit to M.T. for approval scheme for the reconstruction of Newton Road from a point west of Wigmore Lane to Hamstead Road. Estimated cost £250,000.

Wigan, Lancs.—B.C. have approved the construction of a bus turning bay at Norley Hall Avenue for Pemberton Secondary Boys' School. Estimated cost £1,374.

B.C. have approved subject to M.T. grant, road improvement scheme at junction of Millgate and Station Road. Estimated cost £14,000.

SEWERAGE, SEWAGE AND REFUSE DISPOSAL

Barmouth, Merioneths.—U.D.C. to submit to Ministry for approval, scheme for the provision of a main and new gravity sewer, to enable flows from the harbour area to be discharged direct to the Cardigan Bay outfall. Estimated cost £40,000.

Barmouth, Merioneths.—U.D.C. to submit to the Ministry scheme for reconstruction and extension of the harbour and Cardigan Bay outfall sewers respectively. Estimated cost £40,000.

Bolton, Lancs.—B.C. recommended to apply for sanction to borrow £3,500 for the construction of manholes on various sewers and £4,600 for the reconstruction of the Arrow Street sewer.

Bullring, Oxon.—Ministry have approved in principle R.D.C.'s. schemes for sewerage and sewage disposal at Garsington, Tetsworth, Weadale and Holton.

Eston, Yorks.—U.D.C. seeking planning permission for the erection of a preliminary sewage disposal treatment plant near Bran Sands.

Ipswich, Suffolk.—B.C. are proceeding with drawings for the Eastern Area Intercepting Sewer so that tenders may be invited later in the year for the first section thereof from Cliff Quay Sewage Disposal Works to Foxhall Road.

Kingsclere and Whitchurch, Salop.—Steps are to be taken by R.D.C. to secure an extension of the present contract with the Tilbury Construction Co., Ltd., for additional sewerage works. Estimated cost £33,250.

Rhyl, Flint.—U.D.C. have applied for sanction to borrow £95,572 for town's new sewerage scheme.

St. Germans, Corn.—R.D.C. to include Cox Park in the Chilsworthy sewerage scheme. Estimated cost £45,000.

Swaffham, Norfolk.—U.D.C. to proceed with preparation of a sewage works improvement scheme for the existing Watton Road works.

Tiverton, Devon.—R.D.C. have submitted to Ministry for Approval, sewerage schemes for Burlescombe and Westleigh and Holcombe Regis, estimated cost £49,000 and £38,000 respectively; to proceed with the preparation of scheme for the provision of sewers and sewage disposal plant at Hemyock.

Windsor, Berks.—Ministry to hold an enquiry into R.D.C.'s. application to borrow £26,000 for the reconstruction of the sewerage works at Whitmoor Bog.

STREET LIGHTING

Blackburn, Lancs.—Lighting Committee have approved lighting scheme for a stretch of the ring road between Brownhill and Sunny Bower. Estimated cost £3,750.

CONTRACTS

*Full details of the Contracts marked * will be found in our Advertisement Columns.*

BUILDING AND DECORATING

(See also Housing Schemes)

***Aberdare, Glam.**—Erection of fire escape, for U.D.C. Deposit £1. Tenders by September 29.

Aberdeen.—Following works involved in additions to and alterations on Airyhall Home, for City Council: Excavator, concretor, mason and brick; carpenter and joiner; slater and roughcast; bituminous felt roofing; plumber; plaster and tile; electrical; glazier. Applications, in writing, to the City Architect, 11 Broad Street, Aberdeen. Tenders by September 21.

Ashton-under-Lyne, Lancs.—Extension to the Veterans' Pavilion, King George's Playing Fields, for B.C. Documents from the Borough Surveyor, Municipal Offices, Ashton-under-Lyne. Tenders by September 18.

Belfast.—New residential club for seamen, Garmoyle Street, Belfast for Society of St. Vincent De Paul, including the following works: (1) Main building contract; (sub-contracts) (a) electrical installation; (b) L.P.H.W. heating installation; (c) plumbing installation. Documents for the Main Building Contract from P. J. Davidson, Quantity Surveyor, 16 High Street, Belfast, 1. Deposit £10 10s. Documents for (a), (b) and (c) from C. P. McNally, Engineer, 143 Royal Avenue, Belfast, 1. Deposit £3 3s. each. Tenders by September 26.

Berkshire.—Erection of an additional classroom and cloakroom at Cumnor C.E. Primary School for C.C. Applications to the County Architect, Wilton House, Parkside Road, Reading. Deposit £2 2s. Tenders by Sept. 26.

Birmingham.—Re-roofing, repairs to floors and provision of new water closets at 25-29 Whitehead Road, Aston, Birmingham, 6, for Public Works Committee. Documents from the City Estates Officer, Bush House, 65 Broad Street, Birmingham, 1. Deposit £2 2s. Tenders by Sept. 14.

Bournemouth, Hants.—Erection of two laboratories in the form of an extension to the Bournemouth Municipal College, Lansdowne, for B.C. Documents from the Borough Architect's Office, Room 106, Town Hall, Bournemouth. Deposit £2. Tenders by September 27. Sub-contract work in connection with the above as follows: (a) Electrical installations; (b) laboratory furniture. Applications to the Borough Architect, Room 106, Town Hall, Bournemouth.

Brentford and Chiswick, Middx.—Erection of a garage for tractors at Duke's Meadow, for B.C. Documents from the Borough Surveyor, Town Hall, Chiswick, W.4. Tenders by September 14.

Bridge-Blean, Kent.—Construction of six garages, rear of Station Road, Adisham, for R.D.C. Applications to the Engineer and Surveyor, Council Offices, 41 Old Dover Road, Canterbury. Tenders by October 3.

Bridlington, Yorks.—Building of a new war block, covered ways and alterations and extensions to existing buildings at Bempton Lane Hospital, Bridlington, for Leeds Regional Hospital Board. Applications to the Architect to the Board, Park Parade, Harrogate, by September 13. Deposit £2 2s., cheque payable to the Board. Tenders by October 16.

Buckinghamshire.—Following building projects, for C.C.: (1) Aylesbury—erection of the Grange Youth Club, estimated cost £12,000, bills of quantities available October 6, 1961, tenders by October 30; (2) Aylesbury—erection of nurses' houses at Bedgrove, estimated cost £12,000, bills available September 20, tenders by October 16; (3) Beaconsfield—erection of a youth club, estimated cost £15,000, bills October 6, tenders by October 30; (4) Burnham—erection of a primary school, estimated cost £56,000, bills September 29, tenders by October 30; (5) Farnham Royal—erection of four nurses' flats on the Britwell estate, estimated cost £12,000, bills September 20, tenders by October 16; (6) High Wycombe—erection of a girls' high school, estimated cost £150,000, bills September 29, tenders by October 30; (7) High Wycombe—erection of Turnpike Nursery School, estimated cost approximately £12,000, bills September 15, tenders by October 30; (8) Little Kingshill—erection of phase II of the primary school, estimated cost £21,000, bills September 20 tenders by October 30; (9) Wendover—alterations to Wendover House dining room and kitchen, estimated cost £18,000, bills September 29, tenders by October 30; (10) Aylesbury—extensions to Leonard West Old People's Home, estimated cost £2,300, specification September 25, tenders by October 16; (11) Bletchley—conversion of clinic to training centre, estimated cost £3,000, specification September 20, tenders by October 16; (12) Holmer Green—adaptation of hut to labora-

tory, estimated cost £2,350, specification October 9, tenders by October 30. Applications to the County Architect, County Offices, Aylesbury, indicating for which works they wish to tender, as soon as possible. Deposit £3 3s. each, 1 to 9 inclusive.

Caernarvonshire.—Extensions to Llanberis Fire Station for C.C. Documents from the County Architect, County Offices, Caernarvon. Tenders by Sept. 11.

Cardiganshire.—Erection of new administrative offices for the Southern Highways Department at Penhos, Llandysul, for C.C. Documents from the County Architect, County Hall, Aberystwyth. Deposit £1 1s. Tenders by September 30.

Cheshire.—Approved lists of contractors and suppliers from whom tenders may be invited as required are being prepared under the following heads, for C.C.: (a) Building construction or adaptation up to £20,000; (b) building construction or adaptation over £20,000; (c) heating installations; (d) hot water installations, by firms employing registered plumbers; (e) gas installations; (f) electrical installations; (g) sanitary goods; (h) metal windows; (i) ironmongery; (k) precast concrete floors and roofs; (l) structural steelwork; (m) cloakroom equipment; (n) curtain walling and glazing; (o) roller shutters; (p) cycle racks; (q) balustrades and handrails; (r) acoustic tiling; (s) suspended ceilings; (t) cold room installations; (u) gymnasium equipment; (v) paint; (w) chain link fencing. Application forms from Edgar Taberner, county architect, County Hall, Chester, to be returned by September 29.

Cromwell, Tipperary, Eire.—Erection and completion of a 20 classroom primary school at Mary Street, Cromwell, for the Irish Sisters of Charity. Documents from Louis J. Brennan, B.Arch., 7 Upper Pembroke Street, Dublin. Deposit £5 5s. Plans also seen at the office of Thomas Keogh, quantity surveyor, 34 Lower Baggot Street, Dublin. Tenders by Sept. 20.

Colchester, Essex.—Erection of a public convenience in recreation ground, Old Heath Road, for B.C. Documents from Vinton Hall, borough architect, Borough Architect's Department, 64 West Stockwell Street, Colchester. Deposit £2 2s. Tenders by September 20.

Crossmaglen, Armagh.—Building complete of an intermediate school and ancillary works at Crossmaglen for Very Reverend Joseph McEvoy. Documents from W. H. McEvoy, chartered surveyor, Ulster Bank Chambers, May Street, Belfast. Deposit £5 5s. cheque. Tenders by Sept. 21.

Croydon, Surrey.—Following for B.C.: (a) Building alterations, alterations at the Sydenham Primary School, Westbury Road, Croydon; (b) sanitary accommodation, improvements to sanitary accommodation at the Elmwood Primary School, Lodge Road, Croydon; (c) entrance doors, supplying and fitting entrance doors at the Spring Park Primary School, Brindle Road, Shirley. Applications for all or any of the works to Chief Education Officer, 19 Katharine Street, Croydon. Tenders by September 26.

Down.—Internal painting and decoration at Ashgrove Secondary Intermediate School, Newry, for Co. E.C. Documents from G. W. Reside, Margaret Square, Newry. Tenders by September 21.

Dublin, Eire.—Improvement to Blessed Oliver Plunkett National School, Monkstown, Co. Dublin, for Office of Public Works. Documents from the Secretary, Office of Public Works, 51 St. Stephen's Green, Dublin 2. Deposit £1. Plans seen at the residence of Very Rev. J. J. Matthews, P.P., St. Patrick's, Monkstown. Tenders by September 28.

Ealing, Middx.—Construction of lavatories, etc., for B.C. Deposit £2. Tenders by September 22.

Edinburgh.—Demolition of and rebuilding 90 linear yards of random rubble wall, approximately 5ft. in height at Gray's Loan for City Council. Documents from City Engineer, 329 High Street, Edinburgh. Tenders by September 12.

Edinburgh.—Gracemount Primary School, transportable classrooms, toilet accommodation and site works, for City Council. Applications to City Architect, City Chambers, Edinburgh, by September 11. Tenders by September 29.

Ellesmere Port, Ches.—Additional mess room, etc., at Whitby Hall, for B.C. Tenders by September 25.

Epsom and Ewell, Surrey.—Taking down and reinstating two sections of the boundary wall to Bourne Hall, for B.C. Documents from the office of Colin Cobbett, borough engineer and surveyor, Town Hall, Epsom. Deposit £2 2s. Tenders by Sept. 25.

Higham Ferrers and Rushden, Northants.—Grendon water tower, painting of this Braithwaite tank and supports, for Water Board. Documents from the Engineer to the Board, Council Buildings, Rushden. Tenders by September 18.

High Wycombe, Bucks.—Erection of small workshops and messrooms at the following separate sites, for B.C.: Buckingham Drive, Micklefield; Wingate Avenue, Hatters Farm; and Cross Road, Castlefield. Documents from the Borough Engineer and Surveyor, Municipal Offices, High Wycombe. Tenders by September 26.

Huyton-with-Roby, Lancs.—Erection of a two-storey office block for U.D.C. The work will be in traditional construction and the total floor area approximately 14,000 sq. ft. Applications to the Architect and Housing Director, Grasscroft, Archway Road, Huyton, by September 11.

Inverness.—External and internal painter work of one block of twenty-four, four storey flats at Dunabban Road for B.C. Documents from the Burgh Architect, 11 High Street, Inverness. Tenders by September 20.

Kildare, Eire.—Erection and completion of dispensary at Rathangan for C.C. Documents from the County Secretary, St. Mary's Hospital, Naas. Deposit £5 5s. Tenders by September 18.

King's Lynn, Norfolk.—Modernisation of "Birtledene," Ferry Street for B.C. Work comprises repairs to existing structure, complete damp-proofing of the structure and provision of bath, lavatory basin, hot water system, linen cupboard and ancillary works. Documents from the Office of the Borough Engineer, Clifton House, 17 Queen Street, King's Lynn. Deposit £2 2s. Tenders by September 15.

Leeds.—Erection of 18 shops and dwellings for City Council, consisting of two blocks each of six shops with six maisonettes over and garages at Ebor Gardens and one similar block at Charing Cross (scheme 920). Documents from the City Architect, Priestley House, Quarry Hill, Leeds, 9, on or after Sept. 11. Deposit £2, cheques payable to Corporation. Tenders by Oct. 9.

Leicestershire.—Alterations to horticultural buildings, Anstey Frith, for C.C. Applications to County Architect, 123 London Road, Leicester, by September 13. Deposit £2 2s. Tenders by September 22.

Lisburn, Antrim.—Supply, fabrication, delivery and erection of structural steelwork for Head Post Office, Linenhall Street, Lisburn, for Ministry of Finance. Documents from Room 103, Law Courts Building, Belfast, 1. Tenders by September 21.

Llchwyr, Glam.—Repairs, alterations and additions to Rechabite Hall, Gowerton, for U.D.C. Documents from O. C. Wilkinson, Housing and Estates Department, Council Offices, Gorseionon. Tenders by September 18.

Luton, Beds.—Extension of Luton maternity hospital for North West Metropolitan Regional Hospital Board. Apply by Sept. 22.

Luton, Beds.—Following for B.C.: (a) Supply and erection of tubular steel roof trusses and asbestos roof sheeting to garages, Civil Defence Headquarters, New Street, tenders by September 18; (b) alterations and additions to form a deaf aid classroom and store, etc., at Leagrave C.P. Infants' School, tenders by September 21. Documents from Borough Architect, Town Hall, Luton.

Maldon, Essex.—Conversion of a pre-war council house, 10 Cripplegate, Southminster, into two flats, for R.D.C. Documents from G. L. Turner, housing officer, Council Offices, Wantz Road, Maldon. Tenders by Sept. 15.

Morley, Yorks.—Repainting and redecorating contracts, for B.C.: Contract 1, Lewisham Park, repainting throughout; 2, Morley Cemetery, exterior repainting; 3, Town Hall, staircase, corridors, etc., on ground floor and upper ground floor. Documents from the Borough Engineer's Office, Town Hall, Morley. Tenders by September 18.

Newcastle upon Tyne.—Re-roofing of the erecting shop, boat store, shop and shed at the Commissioners' Howdon Yard, Willington Quay-on-Tyne for Tyne Improvement Commission. Documents from R. N. Eggleton, secretary, Bewick Street, Newcastle upon Tyne, 1. Tenders by September 18.

Newcastle upon Tyne.—Construction of a branch library in Jesmond for City Council. Applications to John Atkinson, town clerk, Town Hall, Newcastle upon Tyne, 1. Deposit £5 5s. Plans seen at the office of Henry Faulkner Brown, architect, 13 Archbold Terrace, Jesmond, Newcastle upon Tyne, 2. Tenders by Sept. 15.

Normanton, Yorks.—External painting of the following, for U.D.C.: (1) 42 houses, Woodhouse Crescent, Attlee Street area; (2) 40 houses, Jubilee Avenue, Beech Grove area. Documents from the Surveyor, Town Hall, Normanton. Tenders by September 25.

Northamptonshire.—Single-storey adult centre (with civil defence basement under), junior centre and two-storey boarding hostel, to be erected in traditional materials under one contract, for C.C. Contractors wishing to tender for (a) erection, (b) electrical installation

including underfloor heating and hot water supply, or (c) mechanical ventilating equipment for civil defence basement are to apply to the County Architect, County Hall, Northampton, by September 11.

Northamptonshire. — Taking down and re-erection on a new site of the War Memorial standing at the junction of Church Street and High Street, Burton Latimer, for C.C. Documents from the County Surveyor, County Offices, Guildhall Road, Northampton. Deposit £2. Tenders by September 25.

Northumberland. — Alterations to Amble Fire Station and part conversion into a Library for C.C. Applications to the County Architect, 30/32 Great North Road, Newcastle upon Tyne, 2, by September 11.

Oxford. — Following building works, for City Council: (1) Extensions to Blackbird Leys Primary School consisting mainly of seven classrooms in traditional construction; (2) an extension to Milham Ford School to provide a music room in traditional construction. Applications to the City Architect and Planning Officer, Town Hall, Oxford, by September 12.

St. Helens, Lancs. — Construction of a new infants classroom block and alterations to the existing school buildings, for the managers of St. Matthew's C.E. School, Scholes Lane, Thatto Heath. Applications to Gornall Kelly and Partners, architects, 70 Bickerstaffe Street, St. Helens, by September 13.

Southampton. — Erection of annexe (four-classroom, assembly hall, etc.) at Weston Park Junior School for B.C. Applications to Borough Architect, Civic Centre, Southampton, by Sept. 9. Tenders by Oct. 12.

Stoke-on-Trent, Staffs. — Conversion of approximately 27 waste water closets (duckets) into water closets in the Tunstall and Stoke areas, for City Council. Application to the Chief Public Health Inspector, St. Peter's Chambers, Glebe Street, Stoke-on-Trent. Tenders by September 16.

Sunderland, Dur. — Hylton Red House Community Centre—Supply and laying of hardwood strip, lino tile and quarry tile floorings for B.C. Documents from the Borough Architect, Grange House, Stockton Road, Sunderland. Tenders by September 14.

Taunton, Som. — Supply only of 61 non-maintenance-type dressing cubicles at public baths, for B.C. Documents from Borough Engineer, St. Paul's House, Taunton. Tenders by Sept. 12.

Twickenham, Middx. — Extension of the sports pavilion at Beveree Sports Ground, Station Road, Hampton, for B.C. Applications to the Borough Engineer, Municipal Offices, Twickenham, by September 11. Deposit £2 2s.

Tyrone. — Erection of a primary school at Dromore, and the electrical and plumbing installations therein for Co. E.C. Documents for the school from T. J. Dudley Lewis, 22 New Row, Coleraine, and for the electrical and plumbing installations from Barrett and Agnew, 420 Ravenhill Road, Belfast. Tenders by September 20.

Watford, Herts. — Conversion and modernisation of 13 Essex Road, for B.C. Applications to Dave Carter and Partners, architects, 33 Clarendon Road, Watford, by 2 p.m. September 11.

West Hartlepool, Dur. — Erection of the first phase of the College of Further Education, for B.C. The scheme consists of a single-storey workshop block and a five-storey laboratory block, together with a gymnasium block. The floor area of the workshop block is approximately 18,000 sq. ft. and the floor area of the five-storey block and gymnasium block is approximately 56,500 sq. ft. Documents from the offices of the Borough Architect, Municipal Buildings, West Hartlepool. Tenders by October 30.

West Riding. — Following works, for C.C.: (1) Provision of a new scullery at Thorne Fieldside Infants' School; (2) fencing works to the school boundary at Dearne Thurnscoe The Hill Secondary and J.M.I. School; (3) provision and erection of chain link fencing at Thrybergh J.M.I. School; (4) improvements of ventilation in kitchen at Aston Swallowness J.M.I. School; (5) conversion of a library to a scullery at Morley Victoria Secondary School; (6) dismantling of a double West Riding classroom unit at Maltby Crags Junior School, breaking up foundations and reinstating playground, the re-erection of the structure at Spofforth C.E. School, including the forming of a new base, together with ancillary works. Documents for contracts 1, 2, 3 and 4 on application to the Divisional Architect, Planet Road, Adwick-le-Street, Doncaster, for contract 5 to the Divisional Architect, Bishopsgarth, Westfield Road, Wakefield, and for contract 6 to the Divisional Architect, Salisbury Buildings, Albert Street, Harrogate, Tenders by October 3.

West Riding. — Dismantling and re-erection of classroom unit, etc., for C.C. Tenders by October 3.

Worcestershire. — Extensions to Stourport County Secondary School for C.C. The extensions will be a new block with a corridor connection to the existing school. The accommodation comprises an assembly hall, gymnasium, changing rooms, kitchen, 12 classrooms, craft room, library, cloaks, lavatories and usual administration rooms. The contract also includes a separate youth annexe with club room, canteen and cloakrooms. All the buildings are of traditional construction with usual services and site works. Applications to Nicol, Nicol and Thomas, architects, 111 New Street, Birmingham 2, by September 15. Plans seen at the architects' office, and also the office of the County Architect, 14 Castle Street, Worcester.

CLOTHING AND TEXTILES

Birkenhead, Ches. — Supply of uniform clothing, for B.C. Tenders by September 30.

Durham. — Supply of protective clothing for all County Council establishments (including borough of Stockton-on-Tees) during period ending Oct. 31, 1962, for C.C. Documents from School Meals Service, 58 Hallgarth Street, Durham. Tenders by Sept. 15.

Edinburgh. — Supply of uniform clothing, including shirts, for Corporation Transport. Documents from the Transport Manager, 14 Queen Street, Edinburgh, 2. Tenders by Sept. 29.

Southend-on-Sea, Essex. — Supply of uniform clothing for passenger transport employees for B.C. Documents from the General Manager and Engineer, Corporation Transport, 87 London Road, Southend-on-Sea. Tenders by Oct. 10.

York. — Supply of protective clothing (overalls, aprons and caps) for use in school canteens for City Council. Documents from H. Oldman, chief education officer, Education Offices, 5 St. Leonard's Place, York, on receipt of s.a.e. Tenders by Sept. 15.

DEMOLITION

Barrow-upon-Soar, Leics. — Demolition of 28 ex-M.A.P. bungalows, Mountsorrel, for R.D.C., including the demolition of superstructure of main buildings and outbuildings, taking up concrete floor slabs and general site clearance. Applications to the Engineer and Surveyor, The Grange, 31 Fowke Street, Rothley, by September 9. Tenders by September 25.

Edinburgh. — Demolition work at 1-3 Inglis Green Road and 58-52 Lanark Road, for City Council. Documents from City Engineer, 329 High Street, Edinburgh. Tenders by September 15.

Mansfield, Notts. — Demolition of the following for B.C.: (a) 70 and 72 Rosemary Street; (b) 14, 15, 16 and 17 Plantation Row, Walkden Street; (c) warehouse rear of 64 Stockwell Gate (lately in occupation of Mr. Webster); (d) workshop, etc., Stockwell Gate, rear of King's Head Public House, lately in occupation of British Wood-ware, Ltd. Documents from the Borough Engineer and Surveyor, Carr Bank, Mansfield. Deposit £2 2s., payable to B.C. Tenders by September 25.

Middlesbrough, Yorks. — Demolition of 468-470 Linthorpe Road, 202-204 Parliament Road, for B.C. Documents from the Borough Engineer and Surveyor, Council Office, Middlesbrough. Tenders by Sept. 19.

Poole, Dorset. — Demolition and site clearance works, etc., of 26 dwellings, for B.C. Documents from the Borough Architect, Council Offices, Poole, from Sept. 9. Deposit £1 1s. Tenders by Sept. 23.

ELECTRICAL

Nantwich, Ches. — Electrical installations to pre-war houses as listed below, for R.D.C.: Eight at Dodcott-cum-Wilkesley; four at Newhall (Salesbrook); six at Broomhall; four at Sound. Documents from the Engineer and Surveyor, Stapeley House, Nantwich. Deposit £1 1s. Tenders by September 20.

Normanton, Yorks. — Partial rewiring of the public baths, High Street, for U.D.C. Documents from the Surveyor, Town Hall, Normanton. Tenders by September 18.

Stoke-on-Trent, Staffs. — Following for City Council: (a) Electrical installations, Burnwood C.S. School, extensions—electrical installation; Chell C.P. Infants' School—lighting improvements; Dresden C. of E. School—lighting improvements; (b) miscellaneous—Park C.S. School—laboratory furniture and fittings. Written applications to the City Architect, Kingsway, Stoke-on-Trent, by Sept. 12. Deposit £2 each. Tenders by Oct. 6.

GAS AND WATER SUPPLY

Ballymena, Antrim. — Water main extension and plumbing installation at cottages, etc., Fernishkey, Kells, for R.D.C., including supplying and laying of approximately 550 lin. yd.

of 3in. diameter class B spun-iron water main, together with valves and ancillary fittings. Documents from E. Hollinger, clerk of Council, Rural Council Offices, Cushendall Road, Ballymena. Deposit £5 5s. Tenders by Sept. 15.

Carrick-on-Suir, Tipperary, Eire. — Water supply improvement scheme (contract 2) for U.D.C., including: (1) The construction of intake works at Crotty's Lough, together with the laying of approximately 133yd. of 4in. and 2in. hard p.v.c. pipe; (2) laying approximately 1,820 lin. yd. 8in. or 9in. a.c. main; (3) scraping approximately 3,334yd. 3in. c.i. main; (4) various ancillary works. Documents from Michael Cantrell, of Nicholas O'Dwyer, Son and Partners, consulting engineers, 6 Burlington Road, Dublin, 4. Deposit £10 10s. Tenders by Sept. 21.

Cemaes, Pems. — Crymmych improvement scheme and water supply extensions, 1961, for R.D.C., including excavating and refilling trenches in roads and fields, and supplying, laying and jointing approximately 14,000 lin. yd. of 3in. diameter, 5,200 lin. yd. of 2in. diameter and 500 lin. yd. of 1½in. diameter asbestos-cement pipes, together with appurtenant fittings; the construction of a 20,000-gallon mass concrete reservoir, and pump house, and the installation of pumping plant, together with the necessary fencing. Documents from R.D.C. Offices, Grosvenor Hill, Cardigan, or from J. Owen Parry, Lewis and Partners, consulting engineers, Arcade Chambers, Ammanford. Deposit £5 cheque, payable to R.D.C. Tenders by Sept. 13.

Chelmsford, Essex. — Water main renewals, for R.D.C. Deposit £1 1s. Tenders by September 18.

Colchester, Essex. — Development of Bowden's Borehole, for Colchester and District Water Board. Development of this existing 27in. chalk borehole. The work will comprise removal of debris, lining with slotted steel tubes, treatment with acid, and test-pumping at rates up to 100,000 g.p.h. Documents from John B. Francis, engineer to the Board, Balmerie Hill, Colchester. Deposit £2 2s. Tenders by September 11.

Cork, Eire. — Construction of extension to Castletownroche water supply from Shenakilia to near Cleon National School for C.C. The work consists of laying 3,150 lin. yd. of 4in. class B main and 2,850 lin. yd. of 3in. class B main in either asbestos cement or polyvinyl chloride piping, together with all ancillary valves and fittings. Documents from County Council Offices, Annabella, Mallow, on payment of £1 (not returnable). Deposit £10 10s. Tenders by Sept. 20.

Dublin, Eire. — Construction of an underground water storage tank of 120,000 gallons capacity, in reinforced concrete, and other ancillary works at Dublin Airport, for Department of Transport and Power. Applications to Department of Transport and Power, Kildare Street, Dublin, 2. Deposit £5. Tenders by Sept. 19.

Dungannon, Tyrone. — Bawn/Carnteel water scheme. Manufacture, delivery and erection of two electrically driven pumps and ancillary equipment for the above scheme, for R.D.C. Documents from Munce and Kennedy, consulting engineers, 133 University Street, Belfast. Tenders by Sept. 21.

Reading, Berks. — Blewbury Pumping Station: New borehole (No. 4) for Thames Valley Water Board, including the sinking and test pumping of a 24in./21in. normal diameter borehole, approximately 200ft. deep. Documents from the office of the Engineer and Manager, 16-20 The Forbury, Reading. Deposit £3 3s. Tenders by Sept. 18.

Port Talbot, Glam. — Cwmavon/Baglan/Sandfields water main for B.C. Deposit £2 2s. Tenders by Sept. 25.

Skipton, Yorks. — Water main, Grassington, for Craven Water Board. Apply by September 18.

Staffordshire. — Tittesworth reservoir scheme (contract 54): Main buildings for water treatment plant for Potteries Water Board, including construction of a reinforced concrete, brick and stone building incorporating clear water pump house, administrative block and chemical house; a reinforced concrete, brick and stone raw water pump house, together with access roads, drainage and ancillary works, at Tittesworth Reservoir, the entrance road to the reservoir being about two miles north of Leek, on the main Leek-Buxton Road, A.53. Documents from C. V. Brown, engineer and manager and clerk to the board, Albion Street, Hanley, Stoke-on-Trent. Deposit £5 5s. Tenders by Sept. 19.

Templemore, Tipperary, Eire. — Construction of house connections to existing sewers, and the reconstruction of existing water distribution system, for U.D.C. The work comprises the construction of approximately 80 house connections to sewers entailing the laying of the following provisional lengths of stoneware pipe sewers: 1,375 lin. yd. 4in.; 764 lin. yd. 6in.; 30 lin. yd. 9in. and ancillary fittings. Together with the improvement of the water

distribution system entailing the laying of the following provisional lengths of c.i. class B. pipe watermain: 20 lin. yd. 7in.; 60 lin. yd. 6in.; 60 lin. yd. 5in.; 600 lin. yd. 4in.; 600 lin. yd. 3in.; 900 lin. yd. 4in.-3in. service pipes and ancillary fittings. Documents from Michael Cantrell, of Nicholas O'Dwyer, Son and Partners, consulting engineers, 6 Burlington Road, Dublin. Deposit £10 10s. Tenders by October 2.

HEATING AND VENTILATING

Belfast.—Following for City Council: (c) Renewal of existing low pressure hot water heating boiler at Nettlefield Primary School, Radnor Street, Belfast, 6; (d) renewal of existing low pressure hot water heating boiler and ancillaries at Avoniel Primary School, Avoniel Road, Belfast, 5; (e) conversion of craft room into a physics laboratory at Model Secondary School for Boys, Ballysallyan Road, Belfast, 14; (f) building work, viz., repairs and improvements to Gate Lodge at Glenbank Park, Belfast, 14. Documents from the City Architect's Department, 40 Academy Street, Belfast, 1. Tenders by Sept. 21 for (c), (d) and (e) and Sept. 13 for (f).

Belfast.—Heating, plumbing and electric lighting services at Arlington House, Windsor Avenue, for Ashleigh House School. Documents from Barrett and Agnew, consulting engineers, 423 Ravenhill Road, Belfast. Deposit £5 5s. Tenders by Sept. 15.

Birmingham.—Conversion of the hot water supply system to an indirect installation at the Junior Boys' Remand Home, 232 Moseley Road, for City Council. Documents from the office of Sir Herbert J. Manzoni, city engineer and surveyor, Baskerville House, Civic Centre, Birmingham, 1. Deposit £2 2s. Tenders by October 25.

Blackpool, Lancs.—Supply and installation of oil-burning equipment, including oil-fired boiler, radiators and pipework, etc., at the Coleridge Road Depot for Fylde Water Board. Documents from the Engineer to the Fylde Water Board, Sefton Street, Blackpool. Tenders by Sept. 15.

Deptford.—Supply and installation of a new No. 5 Cochran vertical oil fired steam boiler at the bathing station, Speedwell Street, for B.C. Documents from the Borough Engineer, Deptford Town Hall, New Cross, S.E.14. Tenders by October 9.

Durham.—Following, for C.C.: Penshaw New Remand Centre: heating and hot and cold water installation, Durham County Police authority; Peterlee police station and courts: Structural steelwork. Applications to County Architect, South Street, Durham, by September 13.

Halifax, Yorks.—Accelerated low pressure heating installation at Carlton Place Salvation Army Hostel for B.C. Documents from the Borough Engineer, Crossley Street, Halifax. Deposit £1, cheques payable to Corporation. Tenders by Sept. 19.

Witney, Oxon.—Installation of bathrooms and hot water systems in 17 pre-war Council houses at Walnut Row and Meadow End, Fulbrook, for R.D.C. Documents from Engineer and Surveyor, 28c High Street, Witney. Tenders by September 13.

HOUSING SCHEMES

Billesdon, Leics.—Six one-bedroom flats at Tilton-on-the-Hill, for R.D.C. Documents from John W. Stephenson, engineer and surveyor, Council Offices, Thurnby. Deposit £3 3s. cheques payable to R.D.C. Tenders by September 23.

Chesham, Bucks.—Twenty-nine old persons' dwellings, a warden's bungalow and a community centre, on a site off Deansway, for U.D.C. Applications to the County Architect, County Offices, Aylesbury. Deposit £3 3s.

Croydon, Surrey.—Seventy-four dwelling units for B.C., comprising 64 units in two eight-storey blocks and 10 units in two two-storey blocks, at Stroud Green Way on the Ashburton housing estate. Documents from the Borough Engineer, Town Hall, Croydon. Tenders by Oct. 3.

Dudley, Worcs.—Two hundred and seventy-two dwellings, contract 5, for B.C. Apply by Sept. 15. Deposit £2 2s.

Edinburgh.—Leith Fort housing development, stage 1, phase 2, for City Council, including a composite seven-storey block containing 157 houses and 48 courtyard houses together with road and site works. Applications in writing to the City Architect, City Chambers, Edinburgh, 1, by Sept. 11.

Guildford, Surrey.—A block of nine flats and ancillary works at Shawfield Road, Ash, for R.D.C. Applications to I. W. Snape, Millmead House, Guildford, before September 11. Deposit £2 2s. Tenders by October 11.

Harrowich, Essex.—Eight flats at King's Head Street, for B.C. Documents from the Borough Engineer and Surveyor's Department, Town Hall, Harwich, on or after September 14. Tenders by October 4.

Hemsworth, Yorks.—Six one-bedroom type bungalows in the parish of Havercroft, for R.D.C. Documents from the office of the Engineer and Surveyor to the Council, Brierley Hall, Brierley, near Barnsley. Deposit £4 4s. Tenders by Sept. 20.

Letterkenny, Donegal, Eire.—Thirty-seven houses and development of sites at Ballyboe/Glencar, together with development and other incidental works, for U.D.C. Documents from Charles V. McLaughlin, architect, Letterkenny, or B. J. O'Grady, town clerk, Urban District Council Offices, Kilmacrennan Road, Letterkenny. Deposit £10. Tenders by Sept. 22.

Long Ashton, Som.—Twenty-nine three-storey flats and maisonettes at Pill, near Bristol, for R.D.C. Applications, together with details of similar work already executed, to Miles and Wills, consultant architects, 18 Great George Street, Bristol, 1, by September 12. Tenders by October 10.

Manchester.—Two hundred and eighty-one dwellings at Chapel Lane, Hadfield, Glossop (contract 345) for City Council. Documents from the Director of Housing, Town Hall, Manchester, 2. Tenders by Oct. 2.

Middlesbrough, Yorks.—One hundred and twenty-six dwellings and 43 garages for B.C. Deposit £2 2s. Tenders by Oct. 9.

Newbury, Berks.—One block of four flats with six garages at 106 Craven Road, for B.C. Documents from the Borough Surveyor, Municipal Buildings, Newbury. Tenders by September 25.

Peterborough.—A caretaker's bungalow at (1) Eastholm Secondary Girls' School and (2) Werrington County Primary School, for Joint Education Board. Applications to the Surveyor to the Joint Board, Town Hall, Peterborough, by Sept. 11. Deposit £2 2s. cheques payable to the Board. Tenders by Sept. 25.

Reading, Berks.—Six one-bedroom flats and 19 prefabricated garages at the junction of Shinfield and Whitley Wood Roads, for B.C. Documents from the Borough Architect, Town Hall, Reading, on and from Sept. 8. Deposit £2 2s. cheques payable to Corporation. Tenders by Oct. 2.

***Southampton.**—Block of flats for B.C. Apply by Sept. 11.

Staffordshire.—One pair of semi-detached, three-bedroom houses with detached police station and garages at Warslow, for C.C. Applications to T. H. Evans, clerk of the County Council, County Buildings, Stafford, by Sept. 22. Deposit £2 2s. Tenders by Oct. 31.

Stockport, Cheshire.—Following for B.C.: (1) 8 aged persons' flats at Liverpool Street, Reddish; (2) 12 aged persons' dwellings at Dialstone Lane, Stockport; (3) 14 aged persons' flats and four aged persons' bungalows at Frodsham Avenue, Heaton Moor; (4) 15 aged persons' bungalows at Meadows Road, Heaton Chapel. Documents from Borough Architect, Town Hall, Stockport. Tenders by Oct. 20.

Sunderland, Dur.—Following dwellings for B.C.: (a) Pennywell estate, 48; (b) Thorney Close estate, 18; (c) Thorney Close estate, 24; (d) Town End Farm estate, 14; (e) Hylton Red House estate, 20; (f) Hylton Red House estate, nine; (g) Grindon Village estate, four. Documents from Borough Architect, Grange House, Stockton Road, Sunderland. Deposit £2 2s. each. Tenders by Sept. 18.

Thedwastre, Suffolk.—Twelve bungalows at Steeles Road, Woolpit, for R.D.C. Applications to Peter Barefoot, architect, 22 Thorfare, Ipswich. Deposit £2 2s. Tenders by October 4.

Thedwastre, Suffolk.—A block of six bungalows at Grove Park, Walsham-le-Willows, for R.D.C. Applications to Mitchell, Weston and Clayton Smith, architects, 38 Churchgate Street, Bury St. Edmunds. Deposit £2 2s. Tenders by October 4.

Tredegar, Mon.—A three-bedroom type bungalow at the recreation ground, for U.D.C. Documents from the Engineer/Surveyor, Park Chambers, Tredegar. Tenders by September 16.

Truro, Corn.—Sixteen old people's dwellings at James Place, Mitchell Hill area, for City Council. Documents from the office of the City Engineer and Surveyor, Town Hall, Truro. Deposit £2 2s. Tenders by September 18.

Tyrone.—Erection of headmaster's residence at Castlederg Secondary Intermediate School and redecoration and repairs at Victoria P.S. Teacher's Residence, for Co. E.C. Applications to the Chief Education Officer, Education Chambers, Omagh. Tenders by Sept. 19.

Warwick.—Construction of the estate roads, including storm and foul water sewers, water mains and the complete erection of 32 houses, paths, drains and fences, at the Housing Site, Kingsley Road, Bishop's Tachbrook, for R.D.C. Applications to T. W. H. Watkiss clerk of the Council, Council Offices, 1 Warwick New Road, Leamington Spa, by September 25. Plans seen at the Council Offices, or at the offices of Harry W. Weedon and Partners.

architects, 44-47 Calthorpe Road, Edgbaston, Birmingham 15. Deposit £2 2s.

Waterford, Eire.—Fourteen cottages and incidental works in various locations throughout the county for C.C. Applications to the County Secretary (Housing Section), Davitt's Quay, Dungarvan, Co. Waterford. Tenders by Sept. 30.

***Wincanton, Som.**—Old people's accommodation, for R.D.C. Deposit £5 5s. Tenders by October 10.

Woking, Surrey.—Groundsman's house at Sheerwater recreation ground for U.D.C. Documents from Engineer and Surveyor, Council Offices, Woking. Deposit £2 2s. Tenders by Sept. 25.

MATERIALS AND SUPPLIES

Ashton-in-Makerfield, Lancs.—Supply and delivery to the Council's Depot of 2,000 galvanised dustbins and covers of 2½ cu. ft. capacity, to British Standard Specification 792/47 for U.D.C. The dustbins to be delivered in lots of 500. Applications to the Chief Public Health Inspector, Public Health Department, Town Hall, Ashton-in-Makerfield. Tenders by Sept. 15.

Belfast.—Supply and delivery of the following for City Council: (a) 10,000 dustbins, and (b) 200 litter receptacles. Documents from the City Surveyor's Cleansing Section, 16 Ormeau Avenue, Belfast, 2. Tenders by Sept. 18.

Brighton, Sussex.—Supply of one hundred sectional timber garden sheds, each approximately 7ft. x 5ft., delivered in lots of five to various addresses on housing estates, for B.C. Documents from the Borough Surveyor, 26/30 King's Road, Brighton. Tenders by September 25.

Bristol.—Supply of the following during 12 months Nov. 1, 1961, to Oct. 31, 1962, for City Council: Fencing materials and roofing felts; rainwater pipes and fittings cast iron and asbestos-cement; rubber footwear, donkey jackets. Documents from City Engineer and Planning Officer, Cabot House, Deanery Road, Bristol, 1. Tenders by Sept. 14.

Cardiff.—Supply and delivery of the following approximate quantities for proposed diversion of River Taff at Clarence Bridge, Cardiff, for Glamorgan River Board: (1) hardcore filling (70 per cent. stone)—32,000 cu. yd.; (2) selected hardcore (6in.-2in. grading)—4,000 cu. yd.; (3) selected block stone (2cwt.-5cwt.)—12,000 cu. yd.; (4) selected hardcore (9in.-6in. grading)—8,000 cu. yd. Documents from the Clerk and Engineer to the Board, Tremains House, Croychurch Road, Bridgend. Tenders by September 23.

Flintshire.—Supply and delivery of tyres, tubes and remoulds for C.C. Documents from County Surveyor, Llwynegryn, Mold. Tenders by Sept. 11.

Lancashire.—Supply of the following for C.C.: (1) Aggregate for concrete; (2) ashes (fine and rough); (3) castings—manhole covers, gully grates, etc.; (4) cement; (5) chippings—precoated granite and dry limestone and granite; (6) concrete—ready mixed; (7) hot rolled asphalt; (8) kerbs, flags, etc., hydraulicly pressed; (9) laying of plastic white lines and reflector studs; (10) petrol, derv, kerosene and T.V.O.; (11) pipes, etc.—earthenware; (12) plastic white line material; (13) sand for concrete, building and gritting; (14) tar, tar compounds and bitumen; (15) tar and bitumen macadam, etc., and cold asphalt; (16) traffic signs; (17) tools (shovels, picks, etc.); (18) concrete pipes. Applications to the County Surveyor, County Hall, Preston (P.O. Box 9), by Sept. 30, quoting reference 179/51.

Leeds.—Supply of plastic press cloths to Knotrop sewage works, for City Council. Documents from D. Currie, city engineer, Civic Hall, Leeds 1. Tenders by September 15.

Leyton, Essex.—Supply and delivery of 14 cu. yd. capacity galvanised steel refuse containers and lids for B.C. Applications to the Borough Engineer, Town Hall, Leyton, E.10. Tenders by Sept. 11.

North Riding.—Supply, during the summer of 1962, of ground rock salt for use on roads, for C.C. Applications to the County Surveyor, County Hall, Northallerton, enclosing a stamped addressed envelope. Tenders by Oct. 16.

Seaham, Dur.—One hundred and thirty-six houses and flats, Northlea estate. Supply and delivery of the following materials, for U.D.C.: Timber, breeze blocks, hardware, joinery, precast concrete units, fireplaces, baths and sanitary ware, plumbing, plastering, glazing, general. Documents from the Engineer and Surveyor, Cliff House, Seaham. Tenders by September 21.

Wallasey, Cheshire.—Design and supply of the bar and fabric reinforcement required in connection with the erection of three blocks of five-storey flats and maisonettes at Twickenham Drive, Leasowe, for B.C. Documents from the Borough Architect, Town Hall, Wallasey. Tenders by September 18.

PLANT AND MECHANICAL TRANSPORT

Ashton-in-Makerfield, Lancs.—Supply of a Karrer Gamecock dual-tip refuse collection vehicle and trailer for U.D.C. Documents from Frank Dean, clerk of the Council, Town Hall, Ashton - in - Makerfield. Tenders by Sept. 15.

Belfast.—Supply and delivery of mechanical excavator for City Council. Documents from Parks and Cemeteries Department, Botanic Gardens Park, Belfast, 7. Tenders by Sept. 13.

Birkenhead, Ches.—Refuse and general haulage vehicles for B.C. Documents from Cleansing Superintendent, Central Depot, Cleveland Street, Birkenhead. Tenders by Sept. 13.

Croydon, Surrey.—Supply of one 400/500 g.p.m. pump/foam tender mounted on a Bedford T.K. 132in. chassis for B.C. Specification from the Chief Fire Officer, Old Town, Croydon. Tenders by Sept. 30.

Dartford, Kent.—One only 20/30 cu. yd. Gibson Pendulum refuse collection body on Bedford TK Chassis, for R.D.C. Documents from The Engineer and Surveyor, White Oak, Swanley, Kent.

Isle of Wight.—Supply of one new 5-ton long wheelbase tipping lorry with diesel engine for the Isle of Wight Water Board. Documents from the Engineer and Manager, Isle of Wight Water Board, St. Nicholas, 58 St. John's Road, Newport, I. of W. Tenders by Sept. 11.

Southampton.—Supply of vehicles for B.C. Tenders by Sept. 29.

Stockport, Ches.—Supply and delivery of one new Fordson super major tractor for B.C. Documents from Borough Surveyor, Town Hall, Stockport. Tenders by Sept. 18.

Swadlincote, Derbys.—Supply and delivery of one diesel-engined road sweeping machine for U.D.C. Documents from the Engineer and Surveyor, Bank House, Swadlincote. Tenders by Sept. 11.

PLAYING FIELDS, PARKS, ETC.

Halifax, Yorks.—Construction of three hard tennis courts and one hard porous pitch at the Illingworth School Base playing fields, for B.C., including general and rock excavation and drainage work. Documents from the Borough Engineer, Crossley Street, Halifax. Deposit £2, cheques payable to Corporation. Tenders by Sept. 18.

Midlothian.—Construction of a small rugby pitch and development of surrounds at Woodburn Primary School, Salters Road, Dalkeith, for C.C. Work includes levelling by earth-moving equipment, draining and cultivating about three acres, fencing and tarmac work. Documents from County Engineer, 32 Palmerston Place, Edinburgh, 12. Tenders by Sept. 19.

Fylde.—Provision of two games courts at the Omagh Secondary Intermediate School for Co. E.C. Documents from W. H. McAlister and Partners, architects, 9 Ferryquay Street, Londonderry. Tenders by Sept. 18.

RIVER AND FLOOD PREVENTION WORKS

Middlesex.—Construction of a relief culvert to carry Yeading Brook under the Western Region railway at Ruislip Gardens Station, West End Road, Ruislip, for C.C. This will comprise the driving of two tunnels through the railway embankment and lining with reinforced concrete segments 5ft. 6in. diameter (the length of tunnel is approximately 140ft.), together with ancillary works of forming an inlet channel, construction of a rectangular culvert, mass concrete abutments and invert, and stressed concrete beams as decking (internal dimension 50ft. in length by 15ft. wide by 5ft. 6in. deep), construction of head walls and concrete inverts. Documents from the County Engineer, Middlesex House, 20 Vauxhall Bridge Road, Westminster, S.W.1. Deposit £2. Tenders by Sept. 27.

ROADS, BRIDGES AND SITE WORKS

Ballymena, Antrim.—Sinking of boreholes on a new school building site at Doury Road, Ballymena, for Governors of Ballymena Academy, including for drilling bore holes and analysis of soil samples. Documents from McCutcheon and Wilkinson, chartered architects, 34 High Street, Ballymena. Deposit £3 3s. Tenders by September 18.

Barking, Essex.—Surfacing of the East Ham and Barking by-pass for B.C. Tenders by September 25.

Bath.—Removal of human remains from burial ground for City Council. Deposit £2 2s. Tenders by September 20.

Buckinghamshire.—Road works trunk road A.40 for C.C. Deposit £2. Tenders by September 25.

Bury, Lancs.—Making-up of Back Parkhills Road, for B.C. Documents from Borough Engineer, Town Hall, Bury. Tenders by Sept. 16.

***Carlton, Notts.**—Making-up of Darley Avenue for U.D.C. Deposit £2. Tenders by September 19.

Carmarthenshire.—Carmarthen—Llandeilo Trunk Road A.40, improvement at Tanerdy, near Carmarthen, for C.C., including the excavation of approximately 6,700 cu. yd. of material, construction of surface water drains, fencing and footway works at the above site, which lies at the junction of Route A.40 and Route A.484. Documents from J. L. Richards, county engineer and surveyor, Roads and Bridges Dept., County Hall, Carmarthen. Deposit £2. Tenders by September 16.

Cheshire.—East of Birmingham-Birkenhead trunk road, A.41, improvement at Chowley Bridge, widening the above road for a length of approximately 700 lin. yd., for C.C. The works include fencing, drainage, earthworks, kerbing, carriageway and footway construction, and the lowering of a section of the road. Documents from C. G. Day, county surveyor and bridgemaster, County Surveyor's Department, Backford Hall, near Chester. Deposit £5 5s. cheque. Tenders by Oct. 2.

City of Ely.—Road and sewer work at Priors Court housing site, for U.D.C., comprising principally demolition and site clearance; the construction of approximately 4,914 sq. yd. of new carriageway; the provision of approximately 750 lin. yd. of sewers up to 30in. diameter, and incidental works. Documents from the Office of the City Engineer and Surveyor, Urban Council Offices, Lynn Road, Ely. Deposit £2 2s. Tenders by September 18.

Clare, Suffolk.—Construction of an estate road at Wickhamford, for R.D.C., including 330 lin. yd. kerbing, 1,120 sq. yd. carriageway, 500 sq. yd. footpaths, together with surface water drainage and certain other ancillary works. Documents from the office of the County Surveyor, Manor House, Bury St. Edmunds. Tenders by September 29.

Durham.—Advance construction of bridges—Darlington by-pass motorway for C.C. Deposit £25. Tenders by October 4.

Edinburgh.—Manufacture and laying of hot rolled asphalt for the undernoted contract for City Council: Footpath and carriageway works at Sleigh Drive. Documents from City Engineer, 329 High Street, Edinburgh. Tenders by September 12.

Egham, Surrey.—Private street works at Wier Place for U.D.C. Tenders by Oct. 2.

***Epsom and Ewell, Surrey.**—Widening of College Road and improvements to Burgh Heath Road, for B.C. Deposit £2 2s. Tenders by September 22.

Flintshire.—Heating and planing of cold asphalt surface of A.494, New Street and Chester Street, Mold, for C.C. Documents from County Surveyor, Llwynegrin, Mold. Tenders by Sept. 25.

***Hampshire.**—Improvement at Viables Bridge, for C.C. Apply by September 14.

Hornchurch, Essex.—Reconstruction of A.13 (Lennards Arms) for U.D.C., comprising the following: (1) Re-laying of existing kerb (approximately 200 lin. yd.); (2) providing new kerb (approximately 600 lin. yd.); (3) heating and planing existing carriageway surface (approximately 3,000 sq. yd.); (4) providing and spreading hot rolled asphalt base course (approximately 800 tons); (5) providing and spreading hot rolled asphalt wearing course with precoated chips (approximately 8,000 sq. yd.). Together with all ancillary works. Documents from the office of the Engineer and Surveyor, Council Offices, Billet Lane, Hornchurch. Deposit £2 2s. Tenders by Sept. 25.

Ilford, Essex.—Resurfacing of approximately 10,000 sq. yd. of mastic asphalt verges for B.C. Documents from the Borough Engineer and Surveyor, Town Hall, Ilford. Deposit £2 2s. Tenders by Sept. 26.

Lanarkshire.—Exclusive right to work and carry away the materials contained in Millwood Bing at Thorn housing site, Bellshill, for C.C. Documents from the County Housing Architect and Engineer, 23 Beckford Street, Hamilton. Tenders by September 15.

Lancashire.—Manchester-Preston trunk road A.6, proposed improvement from 717 Manchester Road, Westhoughton, to Newland Drive, Westhoughton. Widening and re-alignment of the above trunk road for a length of approximately 1 mile, for C.C. Documents from the County Surveyor and Bridgemaster, P.O. Box 9, County Hall, Preston. Deposit £10., cheques payable to C.C. Tenders by October 30.

Lancashire.—Construction and completion of roadworks in Springfield Avenue, Padgate, in the rural district of Warrington, for C.C. Plans seen at 9 Fishergate Hill, Preston. Documents from County Surveyor and Bridgemaster, P.O. Box 9, Preston. Deposit £2, cheques payable to C.C. Tenders by September 22.

Lancashire.—Construction and completion of roadworks in Daresbury Road, Pike Place

(part of) and Clarkes Crescent (part of), Eccleston, in the rural district of Whiston, for C.C. Plans seen at 9 Fishergate Hill, Preston. Documents from County Surveyor and Bridgemaster, P.O. Box 9, Preston. Deposit £2, cheques payable to C.C. Tenders by September 22.

Leicester.—Eyres Monsell estate, Montrose Road development, for City Council, which includes the following: Site clearance—approximately 4½ acres; foul and surface water sewers—approximately 491 lin. yd. of 9in. S.G.S.W. pipe; lean-mix concrete carriageways—approximately 2,200 sq. yd.; garage site—approximately 2,600 sq. yd.; flagged footways, turfed verges and other ancillary works. Documents from John L. Beckett, city surveyor, Town Hall, Leicester. Deposit £1 1s. Tenders by Oct. 2.

Leicestershire.—Road reconstruction and diversions at Bruntingthorpe Airfield, for C.C. The total length of the work is approximately 2½ miles and consists of site clearance, fencing, earthworks, drainage and roadworks. Documents from the County Engineer and Surveyor, County Offices, Grey Friars, Leicester. Deposit £5. Tenders by Sept. 22.

Leicestershire.—Reconstruction of a section of approximately 50yd. of route A.6 at Mountsorrel, for C.C., including widening and re-aligning the existing carriageway, kerbing, surface water drainage and all ancillary work. Documents from the County Engineer and Surveyor, County Offices, Grey Friars, Leicester. Deposit £5. Tenders by Sept. 22.

Llandeilo, Carms.—Roadworks at Thomas Terrace, for U.D.C., including the levelling, metalling and surfacing of approximately 617 sq. yd. of carriageway and footpath, and the laying of approximately 50 lin. yd. of surface water drains. Documents from Isaac J. Thomas, clerk of the Council, Urban District Council Offices, 27 Rhosmaen St., Llandeilo. Deposit £3 3s. Tenders by October 3.

Luton, Beds.—Provision of drainage, kerbing, access road and standing, bund walls and ancillary works for the installation of a bulk fuel depot; equipment to be supplied and erected by specialist contractor, for B.C. Documents from Borough Engineer, Town Hall, Luton. Deposit £2 2s., cheques payable to Corporation. Tenders by Sept. 22.

Maidstone, Kent.—Reconstruction of about 3,000 sq. yd. of Oxford Road in hardcore and tarmacadam and surfacing of about 2,500 sq. yd. of path in cold asphalt, for B.C. Documents from the Borough Engineer, Palace Avenue, Maidstone. Tenders by Sept. 18.

Maidstone, Kent.—Superelevation of Sheals Crescent with Bitmac and cold asphalt, and the reconstruction of Mill Street with concrete and hot rolled asphalt, for B.C. Documents from Borough Engineer, Palace Avenue, Maidstone. Tenders by Sept. 18.

Sutton and Cheam, Surrey.—Sutton cemetery extension (stage 3) for B.C., entailing the construction of approximately 3,500 sq. yd. of lean-mix concrete roads and paths, surfaced in bitumen macadam, surface water and sub-soil drains, and other works. Documents from C. Needham, borough engineer and surveyor, Municipal Offices, High Street, Sutton. Deposit £2 2s., cheques payable to B.C. Tenders by Oct. 4.

Taunton, Som.—Paving contract 1, Lane estate, for B.C., including construction of pavements, verges, grassed areas and sundry siteworks to part of the above estate, comprising 76 houses and five blocks of flats. Documents from C. Bacon, borough architect. Floor House, Station Road, Taunton. Deposit £2 2s. Tenders by September 20.

Thornton Cleveleys, Lancs.—Making-up of—Park Road, Thornton, Cambridge Road, Cleveleys (part), for U.D.C. Applications to J. E. Porter, engineer and surveyor, Council Offices, Thornton Cleveleys, Blackpool. Deposit £2 2s. Tenders by September 25.

Wallasey, Ches.—Housing site P.8—site preparation for B.C., including the construction of sewers, pitched carriageways and other incidental works on the above estate lying south of Hoylake Road, Moreton. Documents from the Borough Engineer and Surveyor, Town Hall, Wallasey. Deposit £2. Tenders by September 21.

Wanstead and Woodford, Essex.—Reconstruction of Redbridge Lane West for B.C., including the provision and laying of approximately 9,000 sq. yd. of bitumen macadam wearing course, together with bituminous concrete regulating course, kerbing, drainage, footway construction and appurtenant works. Documents from the Borough Engineer and Surveyor, Municipal Offices, Woodford, E.18. Deposit £2. Tenders by Sept. 12.

Widnes, Lancs.—Advance preparation at Hale Road housing site, contract 407, for B.C. Deposit £2 2s. Tenders by Sept. 21.

Widnes, Lancs.—Advance preparation at Halton View housing site, contract 409, for B.C. Deposit £2 2s. Tenders by Sept. 21.

SEWERAGE, SEWAGE AND REFUSE DISPOSAL

Bournemouth, Hants.—Kinson sewage disposal works, contract 6, for R.C., including the construction of seven sludge drying beds, 65 lin. yd. of 6in. diameter pumping main and 100 lin. yd. of 6in. diameter under-draining main. Documents from the Borough Engineer, Town Hall, Bournemouth. Deposit £1 1s. Tenders by Oct. 6.

Brixham, Devon.—Higher Brixham sewerage for U.D.C., including the laying of about 235yd. of 18in. diameter, 209yd. of 15in. diameter, and 357yd. of 12in. diameter concrete sewers, together with the construction of manholes and storm overflow chamber. Application, in writing, to John H. Haiste and Partners, consulting engineers, 8-10 Southgate Street, Gloucester. Deposit £3 3s. (cheque payable to U.D.C.). Plans also seen by appointment at the Town Hall, Brixham. Tenders by Sept. 26.

***Chichester, Sussex.**—Main drainage of Piddington, C17/8 contract 1, for R.D.C. Deposit £3 3s. Tenders by Oct. 7.

Epsom and Ewell, Surrey.—Laying of approximately 510 lin. yd. of 6in. diameter sewer in Auriol Park and Shadbold Park, for R.C. Documents from the office of Colin Cobbett, borough engineer and surveyor, Town Hall, Epsom. Deposit £2 2s. Tenders by Sept. 25.

Faxton, Yorks.—Construction of sewage disposal works extensions at Stockton-on-Forest for R.D.C. The work comprises hopper bottom settling tank and humus tanks, two 65ft. diameter filters, all in reinforced concrete, sludge beds and pumping station, with ancillary works. Documents from the offices of Fairbank and Son, consulting engineers, 29 St. Mary's, Bootham, York. Deposit £3 3s. (cheque payable to R.D.C.). Tenders by Sept. 30.

Flint.—Proposed sewerage scheme, Bryn-y-Garreg, Flint Mountain, for R.C., including the laying of approximately 500yd. of 6in. stoneware and 100yd. approximately spun iron pipe in fields and highway together with the construction of a small brick septic tank treatment plant filter, with revolving sprinkler, and humus tank. Documents from the Borough Engineer and Surveyor, Municipal Offices, Earl Street, Flint. Deposit £2 2s. Tenders by September 25.

Glanford, Brigg, Lincs.—Wrawby sewerage scheme, contract No. 3 for R.D.C., including the laying of approximately 5,000yd. of 4in. diameter house connections in private lands, together with inspection chambers. Documents from John H. Haiste and Partners, consulting engineers, Belmont House, 20 Wood Lane, Headingley, Leeds. 6. Deposit £3 3s., cheque payable to R.D.C. Tenders by Sept. 13.

Hastings, Sussex.—Laying of approximately 300 lin. yd. of 60in. extra strength concrete pipe culvert at Pebsham Tip, and incidental drainage works for R.C., consisting of the construction of manholes, forebay and tail-bay. The pipes are to be supplied by the Corporation, delivered to site. Documents from the offices of the Borough Surveyor, 37 Wellington Square, Hastings. Deposit £2 2s. Tender by Sept. 18.

Howden, Yorks.—Bubwith and Foggarthorpe sewerage scheme, contract No. 1 for R.D.C., including construction of approximately 3,000yd. of 6in. diameter sewer, 915yd. of rising main, one pumping station, one ejector station and sewage treatment works at Bubwith; approximately 1,000yd. of 6in. diameter sewer, 365yd. of rising main, one ejector station and sewage treatment works at Foggarthorpe. These villages are some three miles apart. Documents from John H. Haiste and Partners, consulting engineers, Belmont House, 20 Wood Lane, Headingley, Leeds. 6. Deposit £3 3s., cheque payable to R.D.C. Tenders by October 2.

Manchester.—Hawthorne road tip site—sewering works for city council, including laying approximately 350 lin. yd. 36in. diameter, 250 lin. yd. 12in. diameter, surface water sewers, and ancillary works. Documents from the City Surveyor (Room 223), Town Hall, Manchester. 2. Tenders by October 2.

***Market Harborough, Leics.**—Kibworth sewerage for R.D.C. Deposit £3 3s. Tenders by Sept. 29.

North Down.—Construction of a pumping station and sewerage at Portavogie for R.D.C. Documents from R. Ferguson and S. McIlveen, consulting engineers, 15 College Gardens, Belfast, 9. Deposit £5 5s. Tenders by Sept. 19.

Nottingham.—Construction of approximately 580 lin. yd. of outfall sewers and two railway crossings at Rise Farm housing estate, Hucknall Road, Nottingham, for City Council. Documents from the City Engineer,

Guildhall, Nottingham. Deposit £2. Tenders by September 21.

Nottingham.—Construction of approximately 580 lin. yd. of outfall sewers and two railway crossings at Rise Farm housing estate, Hucknall Road, for City Council. Documents from the City Engineer, Guildhall, Nottingham, Deposit £2. Tenders by September 21.

Rugeley, Staffs.—Construction of 330 lin. yd. of 18in. diameter, 235 lin. yd. of 30in. diameter, and 200 lin. yd. of 48in. diameter concrete pipes, 515 lin. yd. of open ditch and widening out of 2,100 lin. yd. of existing ditch, together with all ancillary works, including a canal crossing for U.D.C. Documents from B. M. Rollinson, Engineer and Surveyor, The Council House, Rugeley. Tenders by September 19.

Shepshed, Leics.—House drainage and water services, Glenmore estate, for U.D.C., including laying approximately 400 yd. of 4in. and 6in. storm and foul drains and 150 yd. of 1in. and 4in. water services. Documents from McCarthy Collings and Co., 187 Forest Road, Coalville. Deposit £2 2s. Tenders by September 25.

Southam, War.—Sewerage and sewage treatment at Fenny Compton for R.D.C., comprising approximately 4,000yd. of 9in. and 6in. diameter sewers, the construction of treatment works including pumping station, settling tanks, filters, sludge drying beds, etc., and incidental works. Applications in writing to Richards and Dumbleton, consulting engineers, Cornwall Buildings, 45 Newhall Street, Birmingham. 3. Deposit £3, cheque payable to R.D.C. Plans also seen at the office of J. I. Young, Clerk of the Council, Council Offices, Southam, near Leamington Spa. Tenders by October 2.

***Stoke-on-Trent, Staffs.**—Reconstruction of Longton Brookcourse for City Council. Deposit £3. Tenders by September 13.

STREET LIGHTING

Haltemprice, Yorks.—Supply, erection and bringing into service of sodium lighting using specified lanterns, gear and 25ft. steel columns at Beverley Road, Hessle, comprising 31 installations for U.D.C. Documents from the Engineer and Surveyor, Anlaby House, Anlaby, Yorks. Deposit £1. payable to Treasurer. Tenders by Sept. 12.

Manchester.—Supply of the undermentioned street lighting items during the 12 months' period commencing 1st January, 1962, for City Council. Traffic bollards, cable, external lighting fittings for road signs, flashing beacon globes, glass globes, lanterns, mantles, lighting standards (concrete and steel), time switches. Documents from the City Surveyor, Town Hall, Manchester. 2. Tenders by September 12.

Neath, Glam.—Street lighting road B.4434, Tonna, for R.D.C., including the supply and erection of 37 15ft. concrete columns and 37 60-watt sodium lamps, lanterns, together with all auxiliary gear and wiring. Documents from J. T. Jones, engineer and surveyor, 18 Orchard Street, Neath. Deposit £2 2s. Tenders by October 2.

Rayleigh, Essex.—Group "B" street lighting, 1961-62 for U.D.C. Supply and erection of 45 group "B" concrete street lighting columns, with lanterns and metal filament lamps, together with 23 group "B" street lighting columns, with lanterns and sodium vapour lamps. Documents from the offices of the Engineer and Surveyor, Council Offices, Rayleigh. Tenders by September 20.

Willenhall, Staffs.—Installation of class "A" and "B" street lighting for U.D.C., including the erection only of 35 Stanton-type 10F (class "A") and 86 Stanton-type 8F (class "B") street lighting columns and the provision of lanterns and the wiring thereof, in various streets. Documents from the offices of the Engineer and Surveyor, Town Hall, Willenhall. Tenders by September 18.

AWARDS

BUILDING AND DECORATING

(See also Housing Schemes)

Barnack, Peterborough.—Restoration work to Barnack Windmill—R. Thompson and Son, Parsons Lane, Alford. Estimated cost £1,000. Work commenced.

Birmingham.—Erection of industrial premises in Smith Street, Newtown redevelopment area, for B. H. Britton and Sons, Ltd.—W. and J. Webb, Ltd., Great King Street, Birmingham, 19. Estimated cost £40,000. J. E. Graeme Edwards, architect, 68 High Street, Harborne, and Collins and Britton, quantity surveyors, 29 Bennetts Hill.

Bishop Auckland, Dur.—Erection of Post Office telephone exchange—G. Stephenson (Builders and Contractors), Ltd., St. Andrew's Palace, Bishop Auckland.

Bristol.—Construction of a 100,000 sq. ft. single-storey warehouse extension at Whitchurch, for John Harvey and Sons, Ltd. P. Falconer and Partners, architects, Imperial House, Stroud—Sir Robert McAlpine and Sons, Ltd., 80 Park Lane, London, W.I. Estimated cost £300,000.

Cardiff, Glam.—Reconstruction of Crosswell's Brewery for Rhymney Breweries, Ltd.—John Morgan (Builders), Ltd., 14 Cathedral Road, Cardiff. Work has commenced.

Cardiff, Glam.—Erection of offices, shops, a shopping arcade and a multi-storey car park at Hayes Bridge for The Arbee City Development, Ltd.—Tersons, Ltd., Dollis Park, London, N.3. Estimated cost £346,352. C. H. Elsom and Partners, 10 Lower Grosvenor Place, London, S.W.1, are the architects and A. E. Thornton-Firkin and Partners, 17 Fitzhardinge Street, London, W.I., are the quantity surveyors for the scheme. Work has commenced.

Cardiff, Glam.—Erection of an administrative headquarters and aircraft maintenance unit at Cardiff (Rhose) Airport, for Cambrian Airways, Ltd. Kenneth Graham, architect, 10 Churchill Way, Cardiff—John Morgan (Builders), Ltd., 14 Cathedral Road, Cardiff. Estimated cost £50,000.

Carshalton, Surrey.—Supply and fixing of Weatherall Nuraphalte roofing at Stanley Park Primary School, Stanley Park Road, for C.C.—Weatherall Roofing Co., Ltd., Whitehall Place, Gravesend, Kent (Roach Bros., Ltd., Woodcote Road, Wallington, are the main contractors).

Consett, Dur.—Conversion of the Royal Hotel, Blackhill, into hostel accommodation for Consett Iron Co., Ltd. Marshall and Tweedy, architects, 36 Blackett Street, Newcastle upon Tyne—R. E. Coleman, Ltd., High Street, Carrville, Durham City.

Derby.—Erection of 53 shops, office block, hotel and supermarket, etc., at Castlefield Mills, for Main Centre (Derby) (Gee, Walker and Slater, Ltd., Uttoxeter Old Road, Derby. Estimated cost £500,000. Demolition work just commenced.

Dorking, Surrey.—Supply and fixing of Weatherall Nuraphalte roofing at the extension of Gayhurst, Calvert Road, for the War Department—Weatherall Roofing Co., Ltd., Whitehall Place, Gravesend, Kent (C. and G. Cornwall, Lincoln Road, Dorking, are the main contractors).

Eastbourne, Sussex.—Following for the erection of the central public library and municipal offices at the junction of Grove Road and Old Orchard Road, for B.C.: Main contract—Walter Llewellyn and Sons, Ltd., 16-20 South Street, Eastbourne, £166,205 and £171,150, respectively (recommended, subject to Ministry approval); Joseph Cartwright, Ltd., £168,437 and £173,626; Y. J. Lovell (Sussex), Ltd., £170,730 and £175,707; The Nicholson Construction Co., Ltd., £172,490 and £177,160; A. T. Chown and Co., Ltd., £172,307 and £177,491; William Willett (Contractors), Ltd., £173,882 and £178,867; M. J. Gleeson (Contractors), Ltd., £174,667 and £180,209. Tenders also received for the supply of steel—The Steel Firms, Ltd., £19,133 and £17,219, respectively; supply and erection of the structural steel frame—Dorman Long, Ltd., Middlesbrough, £13,273 and £13,883.

Harrogate, Yorks.—Erection of a laboratory for chemical research and an amenity block with two flats at Otley Road for the Tobacco Manufacturer's Standing Committee, 6 Bruton Street, London, W.1—W. G. Birch (Harrogate), Ltd., Montpellier House, Harrogate. Work to commence at once.

Hemel Hempstead, Herts.—Extension of garage areas at Bovingdon and Chipperfield, for R.D.C.—R. Davis and Sons (Chipperfield), Ltd., Chipperfield, £2,251.

Heywood, Lancs.—External painting of the Market Hall, for B.C.—Arthur Lord and Sons (Rochdale), Ltd., 240 Spotland Road, Rochdale (recommended).

Horsham, Sussex.—Supply and fixing of Weatherall Nuraphalte roofing at the highways depot, Tanyard, for West Sussex C.C.—Weatherall Roofing Co., Ltd., Whitehall Place, Gravesend, Kent (Murrell Bros., Ltd., 129 Crawley Road, Horsham, are the main contractors).

Keighley, Yorks.—Erection of new school at Oakbank, Ingrow, for West Riding C.C.—F. Shepherd and Son, Ltd., Blue Bridge Lane, York, £328,437. Work commenced.

Kendal, Westmor.—New factory for Milk Marketing Board and warehouse and office for S.P.D., Ltd.—John Laing and Son, Ltd., Dalston Road, Carlisle.

Letchworth, Herts.—Provision of Nuraphalte roofing at St. Christopher School, for C.C.—The Weatherall Roofing Co., Ltd., Gravesend, Kent.

Llangefin, Anglesey.—Extensions to creamery for Milk Marketing Board—John Laing and Son, Ltd., Mill Hill, London, N.W.7.

London.—Erection of a seven-storey office block, with basement garage, at 22-24 Berners Street, for J. Pasha.—H. Fairweather and Co., Ltd., St. James's Lane, London, N.10. T. Mortimer, Burrows, Hallam and Partners, architects, 44 Bedford Row, W.C.1. Veale and Sanders, quantity surveyors, 19 Hanover Square, W.I. Estimated cost £146,000. Work commenced.

Manchester.—Following for City Council: Sub-contractors for city abattoir—excavating—J. Bennett, Ltd., Warrington; bending and fixing reinforcement steel—E. Mahonie and Company, Leigh-on-Sea; supply of precast concrete units for lairage block—Ferroconcrete (Lancashire), Ltd., Woolton Road, Liverpool, 19.

Newcastle upon Tyne.—Erection of workshops and offices at George Street for Black and Decker, Ltd. M. and H. Gatoff, architects, 26 Mosley Street, Newcastle upon Tyne—Messrs. Constables, 196 Westgate Road, Newcastle upon Tyne.

Nottingham.—Printing works, Wigman Road, Bilborough, for Tom Brown and Co. (Nottingham), Ltd.—John Laing and Son, Ltd., Mill Hill, London, N.W.7.

Rugeley, Staffs.—Repairing concert hall, staircases, etc., at the Town Hall, for U.D.C.—Universal Decorations, 6 Doddington Grove, Bartley Green, Birmingham, 32, £553.

South Shields, Dur.—Erection of three-storey shopping premises at Ocean Road for London and Northern Properties, Ltd., Benton Terrace, Sandyford Road, Newcastle upon Tyne. Marshall and Tweedy, architects, 36 Blackett Street, Newcastle upon Tyne—Middlemiss Brothers, Stepney Bank, Newcastle upon Tyne.

Erection of church hall at the corner of Wantage Street and Birchington Avenue for St. Oswin's Church. J. H. Morton and Son, architects, Martins Bank Chambers, Fowler Street, South Shields—R. Brown and Son, Lord Street, South Shields. Estimated cost £6,000.

Stanley, Dur.—Erection of shops and offices, Front Street, for London and Northern Properties, Ltd., Benton Terrace, Sandyford Road, Newcastle upon Tyne. Marshall and Tweedy, architects, 36 Blackett Street, Newcastle—Middlemiss Brothers, Stepney Bank, Newcastle upon Tyne.

Stoke-on-Trent, Staffs.—Additional work at Kidsgrove Works, for the English Electric

Co., Ltd., involving construction of single-storey factory and adjoining two-storey office block—Taylor Woodrow Construction, Ltd., 345 Ruislip Road, Southall, Middx. Estimated cost £300,000. Work commenced.

Stoke-on-Trent, Staffs.—Erection of headquarters opposite main Boothen stand for the Trustees of Stoke City Supporters Social Club. Venables, Williams and Ball, architects, 14 Moory Street, Congleton—Axon and Brown (Etruria), Ltd., 13 Salem Street, Etruria, Stoke-on-Trent. Estimated cost £15,000.

Sunderland, Dur.—Erection of pre-packed coal distribution centre between Deptford Terrace and Radnor Street, for J. D. Johnson and Co., Ltd., 24 Foyle Street—Atcost, Ltd., 66 Duke Street, Darlington.

Construction of dwarf walls and gates for 642 houses on the Thorney Close estate for B.C.—Direct Labour, £37,506.

Todmorden, Yorks.—Supply and fixing of tiled ranges, fire back boilers, cylinders and immersion heaters to pre-war houses, for B.C. R. R. Street, borough engineer—H. Price and Sons, 9 Rossall Avenue, Radcliffe, near Manchester.

Wigston, Leics.—Repointing of 36 council houses at South Wigston for U.D.C. F. Isherwood, engineer and surveyor—A. H. Wilkinson, 46 Ellis Avenue, Leicester, £1,196. Work commencing this month.

Worcester.—Following for City Council: Provision of additional sanitary accommodation in the men's section at Hillborough—Edward Higgs, Ltd., Orchard Works, Union Place, Northwick Terrace, Worcester, £5,874; reinstatement of buildings damaged by fire in Henwick Road—Bert Andrews and Son, Ltd., Bowling Green Terrace, Worcester, £988; reroofing of the assembly hall at Elbury Mount Primary School—Reliable Roofings, 359 Aldridge Road, Birmingham, 22B, £505; external redecoration of the infants' welfare clinic, mental health training clinic and male workshop at Perryfields—Goodwin and Hammacott, 11 Bank Street, Worcester, £780 (recommended).

DEMOLITION

Heywood, Lancs.—Demolition of property in the Bridge Street clearance area, for B.C.—Patrick O'Neil, Heywood (recommended).

Manchester.—Demolition of properties 2, 4, 6 and 8 Crossford Street, Hulme, in the St. George's redevelopment area for City Council—P. McGuinness, 211 Upper Brook Street, Manchester, 13.

ELECTRICAL

Haslingden, Lancs.—1961/62 programme for the re-wiring of power circuits and incidental works to 20 houses and eight flats at Cedar Avenue, for B.C.—W. Pilling, Blackburn Road, Haslingden, £626. Work commencing Sept. 22.

GAS AND WATER SUPPLY

Bolton, Lancs.—Construction of New Heys service reservoir, for B.C.—Seddon and Fleischer, Ltd., Farnworth (recommended in lieu of previous tender).

Cosford, Suffolk.—Extension of water main to serve Crowcroft Road, Nedging-with-Naughton, for R.D.C.—Edward Thompson, Ltd., Eye, £680.

Dundee and Thrapston, Northants.—Laying and jointing of approximately 1½ miles of 4in. diameter spun-iron water mains with Tyton joints, together with ancillary works, in the parishes of Apethorpe and Woodnewton for R.D.C. Pick, Everard, Keay and Gimson, consulting engineers, 6 Millstone Lane, Leicester—Stamford Construction, Ltd., Uffington Road, Stamford, £1,930 (recommended).

HEATING AND VENTILATING

Plymouth, Devon.—Replacement of a boiler at King Street School for City Council—Johnson and Baxter (Plymouth), Ltd., Eagle Works, Sutton Road, Plymouth, £498 (recommended).

Totnes, Devon.—Provision of 60 domestic hot water supply systems at the following for R.D.C.: Hillrise, Gampton, Memory Cross, Landcove, Beacon View, Darlington, Redlake, Dartington and Contour Heights, Kingswear—J. Palmer and Son, Ltd., Dartmouth, £1,088, £288, £901, £647 and £727, respectively; Furzegood, Marldon—S. G. Hall and Co. Kingswear, £1,475.

HOUSING SCHEMES

Bakewell, Derbyshire.—Eight houses, two blocks of three bungalows and a pair of houses at Bradwell, for R.D.C.—Furniss and Hassell, Station Road, Great Loughton, Notts, £2,133 per house, £8,929 and £3,961, respectively.

Bishop's Castle, Salop.—Eighteen bungalows, warden's quarters, community centre, guests' bedrooms, kitchen, laundry and toilets at Drews Meadow for B.C.—Selleck Nicholls Williams, Ltd., St. Austell, Corn., £40,810.

Boston, Lincs.—Thirty and 28 houses in Woad Farm Road for B.C.—H. H. Adkins (Con-

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tractors), Ltd., Wyberton West Road, Boston, and F. Budge, Tower Road, Boston, respectively.

Bullington, Oxon.—Following for R.D.C.: Fourteen three-bedroom houses, two two-bedroom bungalows and four one-bedroom bungalows at Little Milton—H. Emery and Sons, Ltd., High Wycombe, Bucks, £44,259 (subject to Ministry approval).

Four houses at Chinnor—H. Emery and Sons, Ltd., £8,053.

Eastbourne, Sussex.—Sixty-eight houses, eight flats and 16 garages at Port Road housing estate, section one, for B.C.—The Building and Public Works Construction Co., Ltd., Headlands Grove, Swindon, Wilts, £128,731 (recommended, subject to Ministry approval); The Ringmer Building Works, Ltd., £143,590; W. Llewellyn and Sons, Ltd., £145,361; J. G. Robinson and Sons, Ltd., £146,300.

Hemel Hempstead, Herts.—Ten houses at the Edmund estate, King's Langley, for R.D.C.—E. J. Waterhouse and Sons, Ltd., Kings Works, Chipperfield, King's Langley, £17,567.

Maldon, Essex.—Following for R.D.C.: (a) One block of seven one-bedroom and one two-bedroom bungalows at Marsh Road, Tillingham; (b) one block of seven one-bedroom and one two-bedroom bungalows at Bradwell Waterside—(a) Bishop and Harding, Southminster, £8,680; (b) J. H. Cottam, Ltd., Southminster, £8,842.

Manchester.—Conversion into flats of 12 Kent Road West, Victoria Park, for City Council—Direct Labour (recommended). Estimated cost £1,150.

Norwich.—Seventy-six dwellings and 20 garages at Midland Street for City Council—R. G. Carter, Ltd., Drayton, Norwich, £149,551 (recommended, subject to Ministry approval).

Ringwood and Fordingbridge, Hants.—Seven Homeville traditional houses, including roads and footways at Thornehill, for R.D.C.—Rawlings (Builders), Ltd., Poole, Dorset.

Scotland.—Scottish Special Housing Association, Ltd., contracts placed June 20 to Aug. 24:

Faifley, Clydebanks (1,786 houses): Site servicing—Clydebank Town Council.

Park Road, Crombie, Fife, (50 Unitroy): Road and footpath surfacing—John Miller (Contractors), Ltd., North Queensferry.

Newdyke, Kirkintilloch (54 No-fines): Footpath and open spaces—Kirkintilloch Town Council.

Kennoway, Fife, (48 flats): Site servicing—Robt. Terras Jr., High Road, East Wemyss.

Heathryfold, Aberdeen (332 No-fines): Layout of open spaces, etc.—Superintendent of Parks, Aberdeen Corporation, 15 Bon Accord Crescent, Aberdeen.

Auchinleck, Aberdeen (218 No-fines): Layout of open spaces, etc.—Superintendent of Parks, Aberdeen Corporation, 15 Bon Accord Crescent, Aberdeen.

Artillery Park, Haddington (208 trad.): Road, etc., surfacing—Limmer and Trinidad Lake Asphalt Co., Ltd., 118 Crewe Road North, Edinburgh.

Wyndford, Glasgow: Site exploration (Est.)—Holmpress Piles, Ltd., Leeds Road, Hull.

Newhouse Avenue, Letham, Perth (102 Weir flats): Outside (17) back doors—Chas. K. Smith and Son, 70 South Street, Perth.

Carstairs State Institution (28 trad.): Handrails—Wm. Reid and Sons, Ltd., 162 Glenpark Street, Glasgow.

Pinkie Braes, Musselburgh (30 trad.): Division fencing—Ross Contractors, Raw Smithy, East Calder.

High Valleyfield (Devilla Forest), Fife, (50 Dunedin): Boundary fencing—J. Ross, Muirhouse Dykes, West Calder.

Eastriggs, Dumfries, (35 No-fines): Boundary fencing—Ross Contractors, Raw Smithy, East Calder.

Newdykes, Kirkintilloch (54 No-fines): Screen walls—Allan Bros., Chryston, Lanarkshire.

Dryburgh, Dundee (25 garages): All trades—C. and D. Laird, Ltd., Old Brechin Road, Forfar.

Thrashbush, Airdrie (56 No-fines): Thermoplastic tiling—Marley Tile Co., Ltd., Cadder, Bishopbriggs; electrical work—Hartley Electromotives, Ltd., Monkmoor, Shrewsbury; bitumen felting to canopies and garages—Stirlings Bitumen Products, Ltd., McGowan Street, Paisley.

Bellsdyke, Airdrie (144 Miller): Front entrance and back doors to common stairs—John Stewart and Co. (Wishaw), Ltd., 21 Union Street, Carlisle.

Thrashbush, Airdrie (56 No-fines): Glazier—James Thow, Ltd., 14/18 Fort Street, Ayr. Carstairs Mental Institution (28 trad.): Rear and division fencing—G. and W. Brunton, Ltd., 59 Melville Street, Edinburgh.

Eglinton (2nd. Dev.), Irvine (221 No-fines): Bituminous felt roofing—Scottish Speedwell Co., Ltd., Crownpoint Road, Glasgow, S.E.

Eastriggs, Dumfries (20 No-fines): Floor tiling—Marley Tile Co., Ltd., Cadder, Bishopbriggs.

Eglinton (1st. Dev.), Irvine (113 No-fines): Fencing—McEwan Bros., 102 Hillhead Road, Kirkintilloch.

Mount Pleasant, Thurso (16 lock-up garages): All trades—John B. Swanson, Castletown, Caithness.

Auchterderran No. 5, Fife, (113 No-fines): Hand and guard rails—Dunfermline Engineering Co., Ltd., Inglis Street, Dunfermline.

Hillfoot Road, Bellsdyke, Airdrie (nine garages): Bituminous felt roofing—J. C. McGeagh and Co., Ltd., 102 Grove Street, Glasgow.

Fortrose Street, Glasgow, one block of maisonettes (61 houses): Test piling—Cementation Co., Ltd., 17 India Street, Glasgow, C.2.

Branchton, Greenock (156 Blackburn): Division fencing—Hay and Anderson, 33 Innerwood Road, Kilwinning.

Ferry Road, Edinburgh (68 Dunedin): Doors to front of rear entrances—Crudens, Ltd., Olive Bank, Musselburgh.

Eglinton (central area 4th Dev.), Irvine: Trial bores—Geo. Nicholson and Co. (Mineral Borers), Ltd., National Bank Bldgs., Bathgate.

Thrashbush, Airdrie (58 No-fines): Roof tiling—Marley Tile Co., Ltd., Cadder, Bishopbriggs.

Mount Pleasant, Thurso (200 Wimpey N.F.): Fencing—G. and W. Brunton, Ltd., 49 Melville Street, Edinburgh.

Carron Street, Glasgow (180 N.F. flats): Fencing—James Ross, Muirhouse dykes, Loganlea, West Calder; boundary fencing—Jas. Strang and Son, Broomfield, Polmont.

Widows Land, Burntisland (30 Dunedin): Special fencing—Geo. Henderson, Windygates, Fife.

Beancross, Grangemouth (100 Miller): Installing immersion heaters—S.S. Electricity Board, Stirling.

Torygen, Glasgow (60 multi-storey flats): Painter—J. McAtee, Thornbridge Road, Garthill.

Grystonelea, Shotts (30 Bellstone): Painter—J. Connolly, Station Road, Muirhead, Chryston.

7 Antonine Avenue, Motherwell (1 Weir Q): Fire damage repairs—S.S.H.A., Ltd., D.L.O.

154 Union Street, Aberdeen (Association office): Redecorating offices—Jas. Chapman, 177 Rosemount Place, Aberdeen.



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Watling Street, Motherwell (112 Weir): Painter—J. McAtee, Thornbridge Road, Gallowhill.

Corran, Oban (2 Bayview Road) Blackburn: Fire damage, redecoration — H. Walker and Son, Craigard Road, Oban.

Forth, Lanarkshire (30 trad.): Painter—Bathgate Co-operative Society, Ltd., Jaffrey Street, Bathgate.

Kelloholm, Kirkconnel (260 various): Painter—J. and M. Rough, Ltd., 181 Duke Street, Glasgow.

Toryglen, Glasgow (60 multi-storey flats, 1st Dev.): Re-roughcasting of blocks 1 and 2—S.S.H.A., Ltd., D.L.O.

11 Balderyan Drive, Aucterden: Fire damage repairs (Est.)—S.S.H.A., Ltd., D.L.O.

Pathhead, New Cumnock (five Wier Paragon): Repairs to gutters (Est.)—S.S.H.A., Ltd., D.L.O.

Cairnhill, New Cumnock (32 trad.): External porches—S. T. Connell, 55 Ayr Road, Cumnock.

Addiewell, Midlothian (18 trad.): Plumber—John Hadden and Son, 6b Grange Road, Edinburgh.

Swaffham, Norfolk.—Eight Homeville traditional bungalows at Prestons Pasture for U.D.C.—O. Staines and Sons, Ltd., Swaffham.

MATERIALS AND SUPPLIES

Bolton, Lancs.—Supply of following for B.C.: 500 dustbins—Edward Hill and Sons, Ltd., Regina Works, Lye, near Stourbridge, Worcs; 48 Bollards in connection with the Crompton Way resurfacing programme for B.C.—Franco Traffic Signs, Ltd. (recommended).

Norwich.—Supply of two 85ft. prestressed reinforced concrete beams for footbridge in St. George Street, for City Council—Anglian Building Products, Ltd., Lenwade, Norfolk, £1,190 (recommended).

Worcester.—Supply of 400 steel gates, with posts, for City Council—Kidderminster Steel, Ltd., Standard Works, Mill Lane, Kidderminster (recommended). Estimated cost £1,640.

PLANT AND MECHANICAL TRANSPORT

Bolton, Lancs.—Supply and erection of a new weighbridge at Mayor Street depot for B.C.—W. and T. Avery, Ltd., 56 West Tower Street, Carlisle (recommended).

Norwich.—Supply of a turntable ladder for City Council—David Haydon, Ltd., Birmingham, £10,982 (recommended).

PLAYING FIELDS, PARKS, ETC.

Worcester.—Laying of six non-upkeep courts at the King George V memorial ground for City Council—Durolas (Contractors), Ltd., 7 Gas Street, Birmingham, £1,260 (recommended).

ROADS, BRIDGES AND SITE WORKS

Bacup, Lancs.—Laying of approximately 1,000 sq. yd. single-course and two-course patching hot rolled asphalt on Newchurch Road, A.681, for B.C.—Val de Travers Asphalt, Ltd., Mode Wheel Road, Weaste, Salford, £5,569.

Bakewell, Derbys.—Construction of roads and sewers to 33 housing plots at Bradwell, for R.D.C.—John Hadfield and Sons, Ltd., Effingham Street, Sheffield, £5,740.

Bebington, Cheshire.—Surfacing with hot rolled asphalt sand and sand/stone carpets on the following roads for B.C.: New Chester Road, A.41; New Chester Road, B.5136; Spital Road, B.5137; and Allport Road, Class III.

T. H. McGrath, borough engineer—Trinidad Lake Asphalt Co. (N.W.), Ltd., India Buildings, Water Street, Liverpool, 2, £18,773.

Beeston and Stapleford, Notts.—Scarifying the existing surface and laying approximately 3,000 sq. yd. of two-course hot rolled asphalt surfacing to B.S.S. 594:1958, at Chilwell Viaduct, for U.D.C. B. H. Pattinson, engineer and surveyor—Bettor Roads, Ltd., Nottingham Road, Alfreton, Derby, £3,089 (accepted); Constable, Hart and Co., Ltd., £3,572; Limmer and Trinidad Lake Asphalt Co., Ltd., £3,435.

Downham, Norfolk.—Estate development work at Lodge Road, Feltham, for R.D.C., involving the preparation for and laying of roads and sewers as described: 560 lin. yd. 6in. concrete sewer; 15 concrete tube manholes; 1,300 super. yd. carriageway; 870 super. yd. footpath; 600 lin. yd. kerbing. H. Blakey, surveyor—Edward J. Edwards (Norwich), Ltd., Norwich, £7,442 (accepted, subject to Ministry approval); J. H. Cross and Son, Ltd., £8,272; D. and H. (Contractors), Cambridge, Ltd., £8,960; Walter Lawrence and Son, Ltd., £9,170; Dredging and Construction Co., Ltd., £9,768; Harry Pointer (Norwich), Ltd., £10,819; Derek Crouch (Contractors), Ltd., £11,260. Work about to commence.

Egham, Surrey.—Private street works at Trumpsgreen Avenue (stage 1) for U.D.C., comprising the construction of a lean-mix concrete carriageway (770 sq. yd.), surfacing of carriageway formation of paved footpaths and grass verges, construction of surface water sewers, and ancillary works—Herbert Ward and Sons (Egham), Ltd., 13 Pond Road, Egham.

Frome, Som.—Resurfacing of the road from Lipyeate towards Chamborough Hill, for R.D.C.—Direct Labour.

Hartley, Kent.—Surfacing roads and footpaths in tarmacadam at John's Close, Gorsewood Road to serve eight bungalows for R. A. E. Builders, Ltd.—Hodsons, Ltd., 17 Wrotham Road, Gravesend.

Haslinden, Lancs.—Flagging of footpaths, 1961-62 programme, for B.C., including flagging and ancillary works of approximately 1,550 sq. yd. of footpath on various estates—P. Testa, Newchurch Road, Stacksteads, near Bacup, £1,179. Work just commenced.

Heckmondwike, Yorks.—Making-up of Berwick Avenue (part) for U.D.C. G. Lupton, engineer and surveyor—Ibmac, Ltd., Dockfield Road, Shipley, £2,578 (subject to Ministry approval).

Heywood, Lancs.—Asphalt surfacing at Heap Brow and the carriageway at Angel Meadow, for B.C.—Neuchatel Asphalt (Contracting), Ltd., Whit Lane, Manchester, 6 (recommended).

Hucknall, Notts.—Surfacing of carriageways within the district for U.D.C.—Constable Hart and Co., Ltd., 15 St. James's Chambers, St. James's Street, Derby.

Huddersfield, Yorks.—Making-up of Waverley Road, Marsh, and Gernhill Avenue (part), Fixby, for B.C. A. L. Percy, borough engineer and surveyor—D. J. Bates and Co., Ltd., 2 Yew Tree Road, Birchcliffe, Huddersfield. Work commencing at once.

Huddersfield, Yorks.—Reconstruction of parts of New North Road and Edgerton-Halifax Road, A.629, for B.C. A. L. Percy, borough engineer and surveyor—James W. Tait, Ltd., Moorside Works, Moorside Road, Bradford, 2. Work commencing approximately one month.

Lancashire.—Extension of the Birmingham-Preston motorway (M.6) to be linked with the A.49 (Preston-Winchester) trunk road, about two miles south of Wigan, for C.C. James Drake, county surveyor—Sir Alfred

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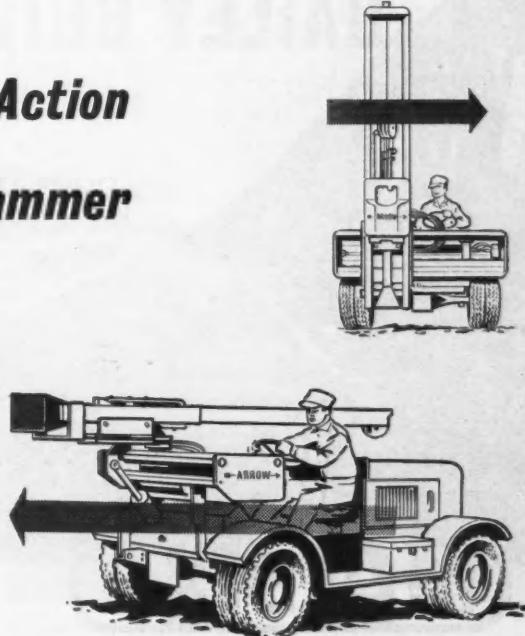
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McAlpine and Sons, Ltd., and Leonard Fairclough, Ltd., £439,355.
Lindsey.—Construction of Laceby By-pass and improvement of Sheffield-Grimsby trunk road, A.18, from Laceby By-pass to Grimsby county/borough boundary, for C.C. C. K. Tallack, county surveyor—Clugston Civil Engineering, Ltd., St. Vincent House, Normanby Road, Scunthorpe, £357,302.

Longendale, Ches.—Construction of roads and sewers at Taylor Street housing site for U.D.C. W. Thorpe and H. Hirst Smith, architects, 65 Barton Arcade Chambers, Deansgate, Manchester, 3—P. J. Mangan and Co., Ltd., Ashton New Road, Clayton, Manchester, 11, £8,100. Work about to commence.

Maldon, Essex.—Construction of the following works at Marsh Road housing site, Tillingham, for R.D.C.: 330 sq. yd. concrete carriageway; 110 sq. yd. tarmacadam footpath; 170 lin. yd. kerbing; erection of pumping station, rising main and other appurtenant works—Bishop and Harding, Southminster, £4,623 (accepted); J. H. Cottam, Ltd., £4,893; J. W. Edward and Co., Ltd., £5,497. Work about to commence.

Northamptonshire.—Reconstruction of Bugbrooke Canal bridge on the Northampton-Banbury road, B.4525, for C.C. The scheme comprises the demolition of the existing brick arch bridge and the construction of a new bridge of 24ft. span by 40ft. width, consisting of mass concrete abutments and wing walls with precast prestressed concrete decking beams and open steel parapets—W. and C. French, Ltd., South Bank, Wisbech, £11,799. Work about to commence.

Northumberland.—Construction of road tunnel under the River Tyne between Jarrow and Howdon for the Tyne Tunnel Committee of the Northumberland and Durham County Councils. Mott, Hay and Anderson, consulting engineers, Idesleigh House, London, S.W.1—Edmund, Nuttall, Sons and Co. (London), Ltd., London, £5,403,203 (separate tenders will be invited for the construction of approach roads, ventilation system, pump house, and other works).

Norwich.—Preparatory works for the resurfacing of Newmarket Road and erection of footbridge over the River Wensum in St. George Street, for City Council—Direct Labour (recommended). Estimated cost £10,883 and £2,810, respectively.

Orrell, Lancs.—Construction of roads and sewers on Station Avenue and Kitt Green housing sites, for U.D.C. J. A. Morris, engineer—Charles L. Warren, Ltd., 78 St. Pauls Road, Wallasey, Cheshire.

Reading, Berks.—Construction of roads, sewers, footpaths and ancillary works for new estate at The Coppice, Woodley, for James Miller and Partners, Ltd.—Farmiloe and McVie, Ltd., 10 High Street, Welwyn, Herts.

Sevenoaks, Kent.—Repair and tar spraying of approximately 5,600 sq. yd. of access roads in five separate sections for R.D.C.—Johnson Bros. (Aylesford), Ltd., Vale Road, Tonbridge, £544.

Solihull, War.—Improvement of Church Road and part of Bills Lane for B.C.—Atherton Sheehan, Ltd., 107 Ashby Road, Hinckley, Leics., £14,955. Work commencing Nov.

Southampton.—Construction of roads, sewers, footpaths and ancillary works for new estate at Pine Drive, Woodhill estate, Thornhill, for James Miller and Partners, Ltd.—Farmiloe and McVie, 10 High Street, Welwyn, Herts.

Sunderland, Dur.—Road works in Hylton Road, for B.C.—Direct Labour.

Truro, Corn.—Reconstruction of approximately 1,950 sq. yd. of Newham Road, together with tarmacadam surfacing and ancillary works, for City Council. S. John O'Farrell, city engineer—G. E. Wallis and Sons, Ltd., 25 Boscombe Street, Truro, £2,587, accepted; W. and J. Glossop, Ltd., £2,589; Hoare Brothers, Ltd., £2,711; A. H. Dingle, Ltd., £2,747; F. W. Hunt, £3,003; E. Thomas and Co., Ltd., £3,109; Trethowan (Builders), Ltd., £3,323. Work to commence shortly.

Weston-super-Mare, Som.—Private street works at (1) Leewood Road, (2) Mendip Avenue, (3) Salisbury Road, (4) St. Austell Road, (5) Woodview Terrace, for B.C. J. R. Freer-Hewish, borough engineer and surveyor—Tar Paving (Winchester), Ltd., 19 Market Place, Frome, Somerset. Work commencing this month.

Worcester.—Site completion works at Little Park Street (Dent Close) and St. Catherine's Vale redevelopment areas for City Council—Asphalt and Public Works, Ltd., Gregories Bank, Worcester, £7,652.

Wrexham, Denbighs.—Improvement of Kingsmills Road (part) and Brook Street (part), and construction of the Croesnewydd Road footpath, for B.C. J. M. Davies, borough engineer—Whitley Bros., Ltd., Holt Road, Wrexham, £3,533. Work to commence November.

SEWERAGE, SEWAGE AND REFUSE DISPOSAL

Bolton, Lancs.—Provision of sewerage scheme in connection with the development of Wayoh reservoir, for B.C.—William Pollitt and Co., Ltd., Pool Street, Bolton (recommended).

Border, Cumb.—Rockcliffe sewerage and sewage disposal scheme, for R.D.C.—Eden Construction Co., Ltd., English Damside, Carlisle. Work commencing September-October.

Bullingdon, Oxon.—Extension of sewer at Old Road, Shotover, for R.D.C. G. R. Niney, Ltd., Wheatley, Oxford, £2,088.

Darton, Yorks.—Construction of a surface water sewer from Agnes Road into the River Dearne at Darton, for U.D.C. E. Irwin, engineer and surveyor—C. and F. Construction Co., Newton Bar, Leeds Road, Wakefield, £1,041 (accepted); C. Hincliffe, £1,124; T. Waddington and Son, £1,175; Wm. Pepper and Co., Ltd., £1,735; Nicholson, Harlow and Co., Ltd., £2,455. Work commencing September 30.

Llanelli, Carm.—Extensions to Halfway and Bynea sewerage scheme, Caernarvon Fawr Farm, Bynea, for R.D.C., comprising: (1) Two sludge digestion lagoons; (2) five sludge drying beds of 4,200 sq. yd.; (3) 6in. and 4in. cast-iron rising mains and pumping station, together with manholes and all ancillary works—Arnold Eng. and Construction Co., Ltd., Ynystawe, Clydach, Glam., £23,455. Work to commence Sept.

Stone, Staffs.—Provision of sewerage for the village of Clayton for R.D.C.—W. Hawkes, engineer and surveyor—Direct Labour, £11,007. Work just commenced.

Warwick.—Construction of Burton Green sewerage and sewage disposal scheme for R.D.C. Sir Herbert Humphries and

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McDonald, consulting engineers, Park Chambers, 276 Monument Road, Edgbaston, Birmingham, 16—Alfred G. Harrison, Ltd., Coventry, £27,857. Work commenced.

Wrexham, Denbighs.—Laying surface water sewer at Borras Park Road for B.C. J. M. Davies, borough engineer—Whitley Bros., Ltd., Holt Road, Wrexham, £1,841. Work to commence November.

STREET LIGHTING

Darlaston, Staffs.—Street lighting conversion scheme, 1961, for U.D.C.: (a) Demolition and re-erection of concrete class B street lighting columns; (b) supply and erection of concrete class A street lighting columns complete; (c) supply and erection of concrete class B street lighting columns complete. C. W. Frost, engineer and surveyor—Cohen Bros (Electric), Ltd., 11 King Edward Buildings, Bury Old Road, Manchester, £4,637 (accepted); Revo Electric Co., Ltd., £5,146; A.E.I. Lamp and Lighting Co., £4,957; S. A. Inston and Co., £6,283; Midlands Electricity Board, £5,866; Concrete Utilities, Ltd., £5,284; Eleco, Ltd., £4,909; Abacus Municipal, Ltd., £4,973; General Electric, Ltd., £5,227. Work commencing shortly.

Heywood, Lancs.—Supply of following for phase I at the Overspill estate, for B.C.: 42 concrete columns—Stanton Staveley Sales, Ltd., Staveley; 42 time switches—Sangamo-Weston, Ltd., 22 Booth Street, Manchester, 2; 42 lanterns, complete with gear—General Electric Co., Ltd., Victoria Building, Manchester, 3 (recommended).

Knutsford, Cheshire.—Supply and erection of 23 group A steel columns and lanterns, and the removal of six existing columns. Also the exchange of 46 vertical mounted 250-W MV lanterns by the new horizontal pattern suitable for use with 250-W.H.P. MV lamps, for U.D.C. G. R. Butler, engineer and surveyor—General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2, £1,519. Work to commence Sept.

Norwich.—Supply, erection and connection of the new lighting installations in Prince of Wales Road, Agricultural Hall Plain and parts of Castle Meadow, Ipswich Road and Newmarket Road, for City Council—Erecon, Ltd., Gt. Amwell, Ware, Herts., £13,300 (recommended).

Worcester.—Provision of street lighting on the Warndon estate, stages 2a and 2b for City Council—Midlands Electricity Board (recommended). Estimated cost £5,500.

GOVERNMENT CONTRACTS

Admiralty.—Particulars of contracts over £4,000 in value placed by Navy Works Department:

Northern Ireland: Foundations for door tracks—R. J. Campbell (Belfast), Ltd., Belfast.

Devonshire: Conversion of tithe barn to chapel—A. N. Coles (Contractors), Ltd., Plymouth; internal painting—Dudley Coles, Ltd., Plymouth; demolition of old buildings—R. Westlake and Sons (Devonport), Ltd., Devonport.

Cornwall: Resurfacing of runway—W. and J. Glossop, Ltd., Exeter; improvements to living accommodation—Noye Bros., Helston, Hampshire; Living accommodation—John Hunt, Ltd., Gosport.

Fife: New laboratory, office block and extension to workshop—J. R. and A. Adam, Ltd., Lochgelly.

Air Ministry.—Contracts to the value of £4,000 or over for the week ended Aug. 25:

Building work: U.S. Field Station, Harrogate, Yorks.—Charles R. Price, Barnsley Road, Doncaster, Yorks.; Cranwell, Lincs.—Bosworth, Walmford and Stepnell, Ltd., Rugby.

Concrete construction pile foundations, etc.: Ringstead, Dorset—Soil Mechanics, Ltd., 65 Old Church Street, London, S.W.3.

Resurfacing of existing camp roads, etc.: Lakenheath, Suffolk—Ayton Asphalt Co., Ltd., Wymondham, Norfolk.

Artificers' work: Acklington (Northumberland)—R. Carse and Son, Ltd., Amble, Northumberland; Langtoft, Rutland—Bettles Building Co., Ltd., Peterborough; Menwith Hill, Harrogate—Arthur Stephenson (Harrogate), Ltd., Harrogate, Yorks.; Hartlebury, Worcs.—Perry and Williamson, Ltd., St. Marks Road, Wolverhampton; Wittering, Northants.—A. Tailby and Son, Ltd., Station Road, Desborough, Kettering, Northants.; Bawtry, Yorks.—G. G. Middleton and Son, Ltd., Gateford Road, Worksop, Notts.; (two contracts) Little Rissington (Glos.) and Hullavington (Wilts.)—Stanley V. Davis, Ltd., Fifield, Oxon.

Ministry of Finance, Northern Ireland.—Contracts exceeding £250 in value placed during the period August 14 to August 25, inclusive:

Construction and completion of Customs post: Killeen, County Armagh—Felix O'Hare and Co., Ltd., St. Colman's Park, Newry, County Down.

Construction and completion of new office building: John Street, Ballymoney, County Antrim—A. Cusick, Ballycastle Road, Arrochar, County Antrim.

Supply of steel windows: S. and S. Houses, Dungannon and Lisnaskea—Williams and Williams, Ltd., 39 University Road, Belfast, 7.

Supply of removable radiator grilles, etc.: Petty Sessions Courts, Belfast—F. Braby and Co., Ltd., Thames Road, Crayford, Kent.

Electrical installation in foresters and woodman's houses: Springwell Forestry Centre—W. G. Anderson, Church Street, Coleraine, Co. Londonderry.

Re-slating, etc., to roof: Probate Office, Bishop Street, Londonderry—J. Wasson and Son, Ltd., 136 Strand Road, Londonderry.

Supply and erection of new fencing: Ministry of Education, Ulster Physical Education College, Jordanstown—Mairs Bros., 12 The Square, Ballyclare, Co. Antrim.

External and internal painting and cleaning: R.U.C. Station and Married Quarters, Belcoo—R. G. Nelson, 28 Townhall Street, Enniskillen.

Alterations to guard quarters: R.U.C. Depot, Enniskillen—H. Pierce and Sons, 27 Darling Street, Enniskillen.

Repairs to cottage: Forestry Centre, Castlecaldwell—T. McCann and Co., Doogary, Omagh, Co. Tyrone.

Supply, etc., gates and fencing, new cattle and sheep pens: Ministry of Agriculture, Belleek—R. J. McKinney, Ltd., 195/201 York Road, Belfast, 15.

Electrical installation in battery laying house: Ministry of Agriculture, Strabane—D. M. Holmes, 24 Abercorn Road, Londonderry.

External painting: Courthouse, Banbridge—Johnston McClughan, Alma Lodge, Dromore, Co. Down.

Ministry of Works.—Contracts placed for week ended Aug. 19:

Cardiganshire: Royal Aircraft Est. Aberporth—installation of data cables—British Insulated Callender's Cables, Ltd., P.O. Box 108, 30 Leicester Square, W.C.2.

Durham: Bishop Auckland—erection of telephone exchange—G. Stephenson (Builders and Contractors), Ltd., Holdforth Works, St. Andrew's Palace, Bishop Auckland.

Fifeshire: High Street, Burntisland—erection of post office—John Best (Contractors), Ltd., 13 Meldrum Road, Kirkcaldy.

Hampshire: Derby Road, Portsmouth—erection of branch Post Office—Samuel Salter (Portsmouth), Ltd., 227, 229 Goldsmith Avenue, Southsea; Royal Air Force Estab., Farnborough—additional switchgear—A. Reyrolle and Co., Ltd., Heppburn, Co. Durham.

London: Victoria and Albert Museum, South Kensington, S.W.7—extension and conversion of direct labour depot—John Greenwood, Ltd., King William Street House, Arthur Street, E.C.4; Post Office, Streatham Hill, S.W.2—provision of new branch Post Office—Walker Clinging and Co., 16 Perry Hill, Catford, S.E.6.

Renfrewshire: Royal Ordnance Factory, Bishoppton—erection of new staff canteen—Spiers, Dick and Smith, Ltd., 10-26 Paul Street, Glasgow, C.4.

Surrey: Telephone Exchange, Scarbrook Road, Croydon—alterations to welfare accommodation—Herbert and Herbert, 155 Clapham Park Road, S.W.4.

Sussex: Post Office, Boundary Road, Hove—provision of temporary public office—R. A. Gates, Ltd., 44 Brunswick Road, Shoreham.

Warwickshire: Inland Revenue Office, Lancaster House, Newhall Street, Birmingham—alterations and adaptations—David Charles, Ltd., 45 Green Lane, Birmingham, 9.

Yorkshire: Home Office, Portobello Road, Wakefield—internal painting—R. H. Birdsall and Son, Lime Grove, Hill Top, Kinttingley.

Post Office.—Contract for duct laying, etc., works to the value of £4,000 and over placed during the two weeks ended Aug. 26:

Brynes and Sullivan, Ltd., 59 Union Street, Bristol, 1; Eden Construction Co., Ltd., English Damside, Carlisle, Cumberland; Geo. H. Graham (Contractors), Ltd., District Bank Chambers, Market Street, Huddersfield, Yorks.; E. W. Moulsom and Sons, Ltd., Forresters Yard, High Street, Wibsey, Bradford, 6, Yorks.; J. Murphy and Sons Ltd., 43 Charteris Road, Finsbury Park, London, N.4; The North Midland Construction Co., Ltd., Portland Works, Daybrook, Nottingham; The Norwest Construction Co., Ltd., Litherland, Liverpool, 21.

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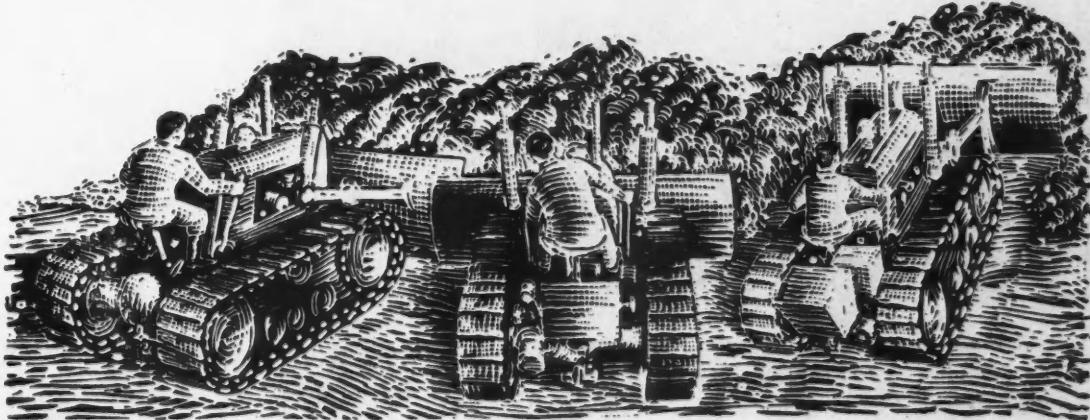


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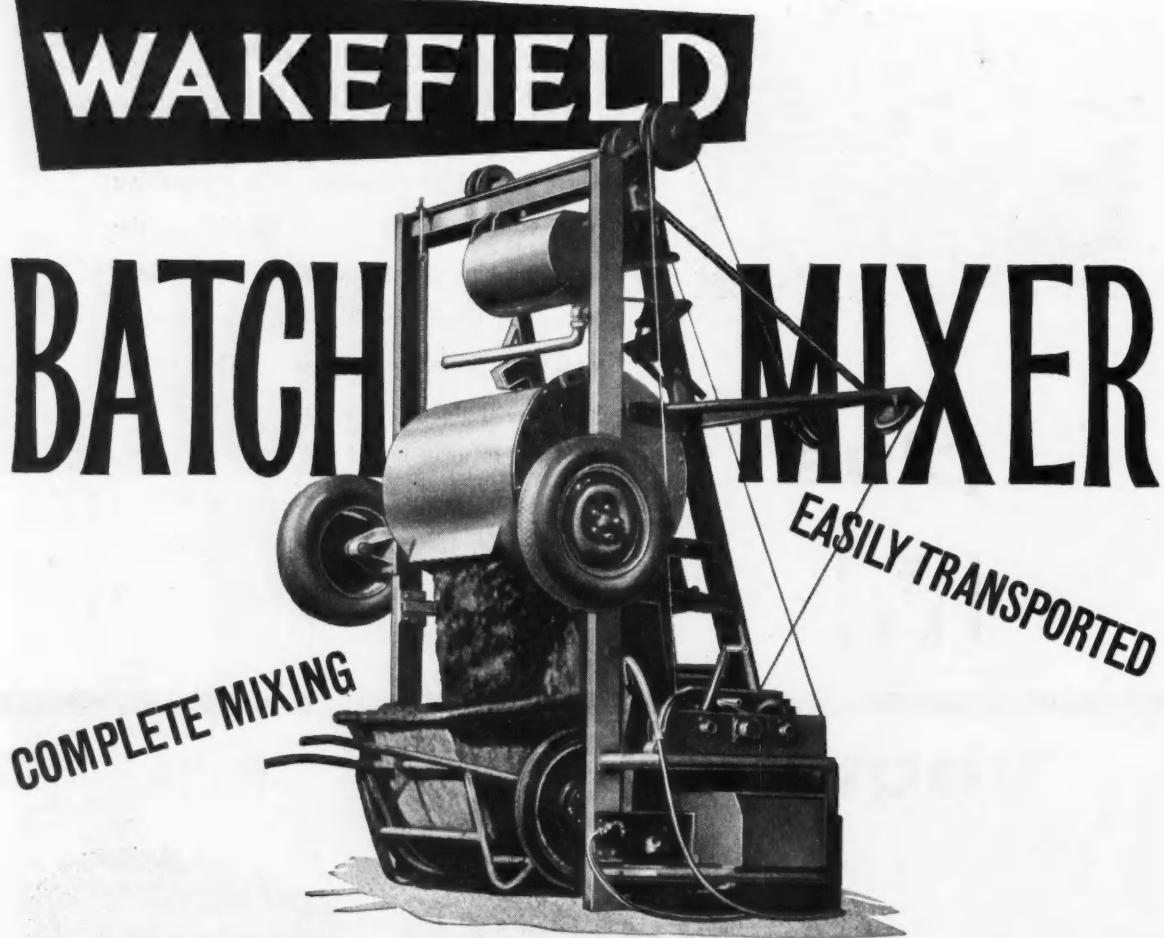
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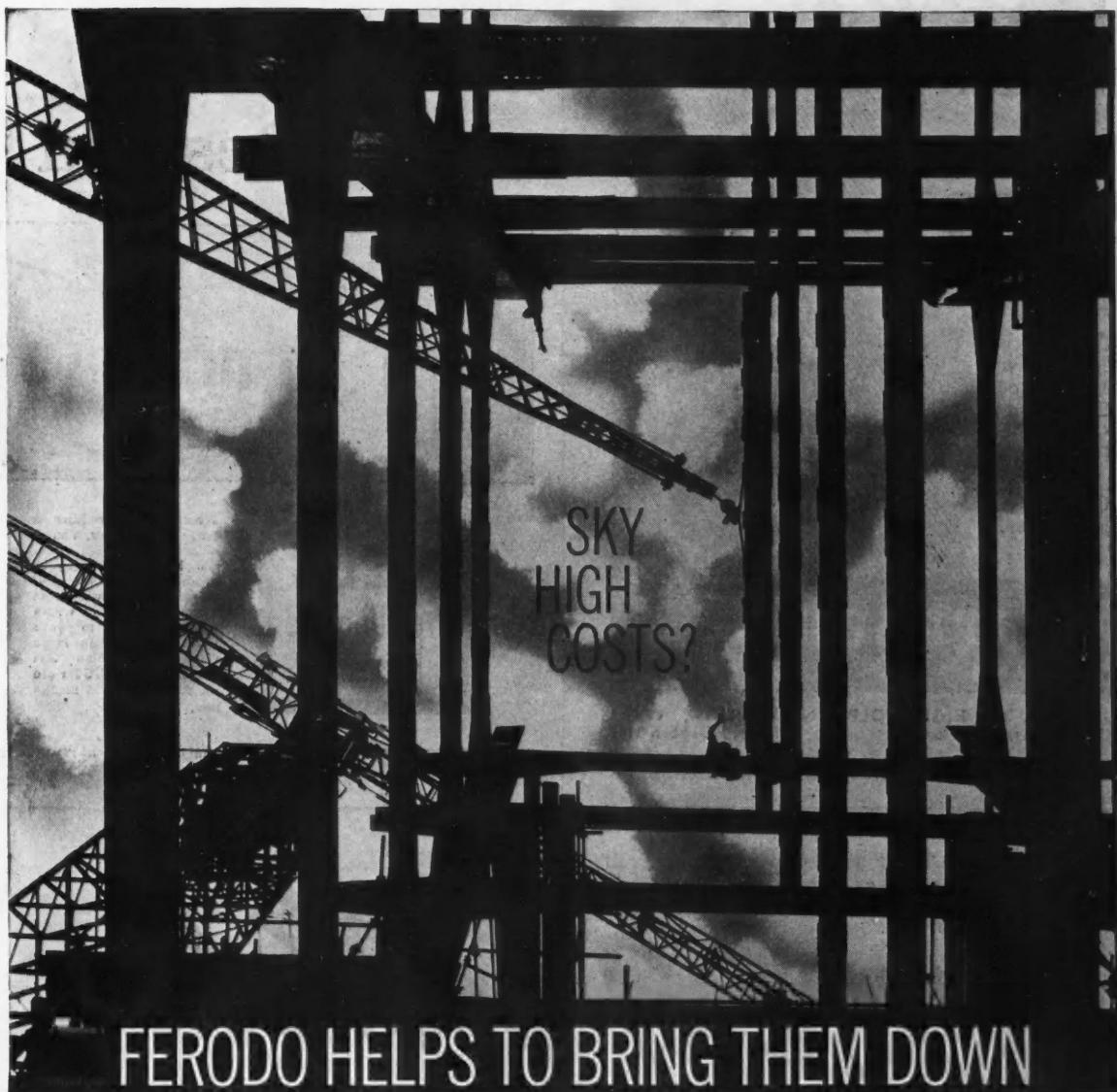
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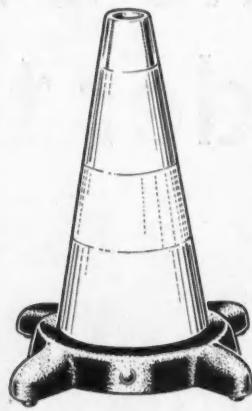
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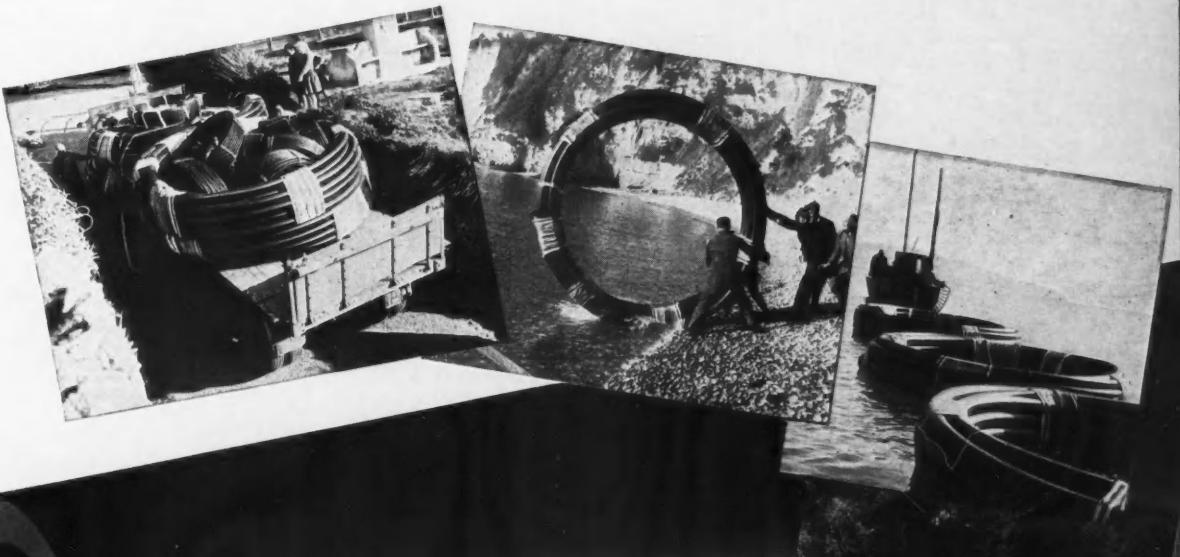
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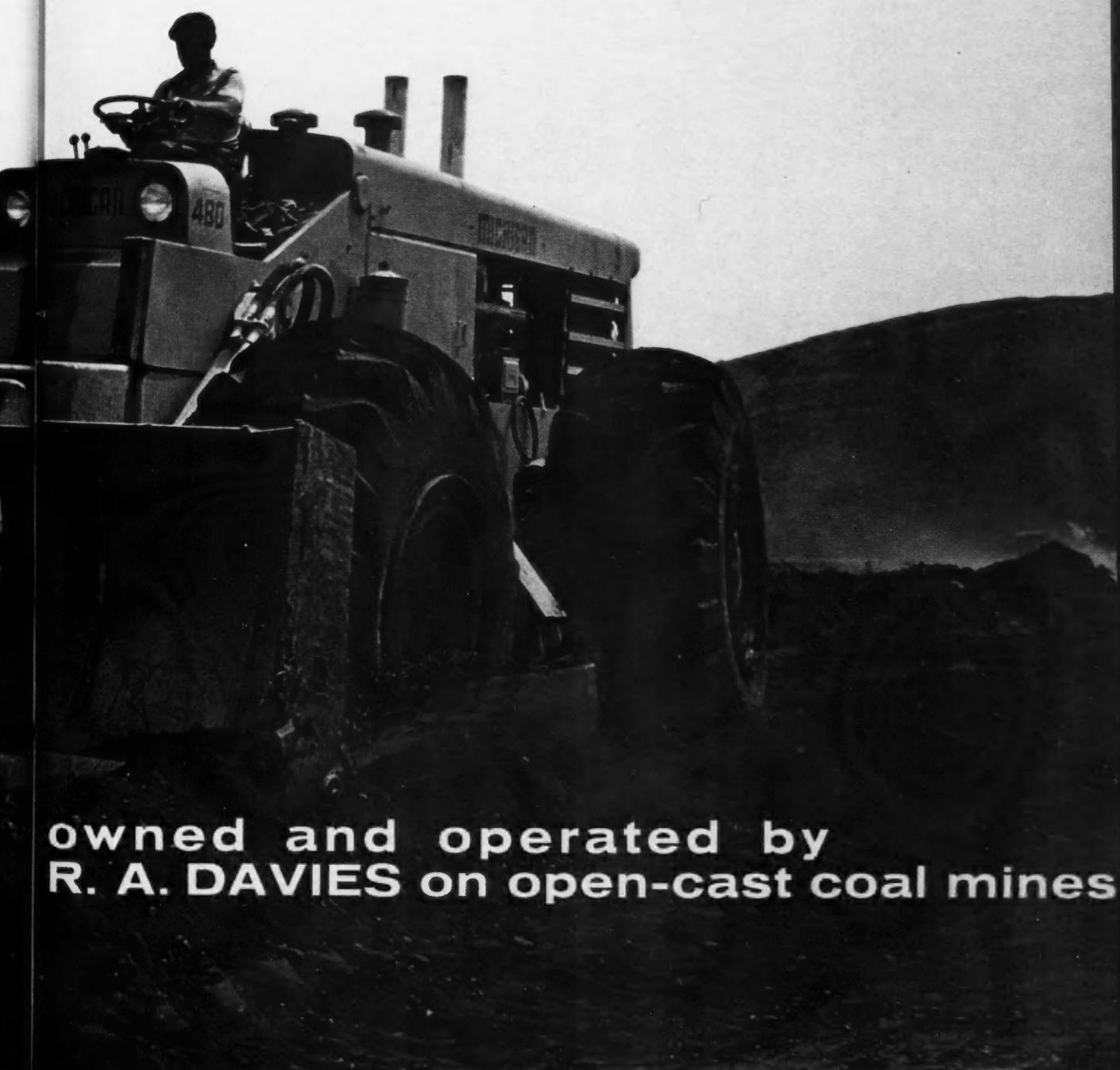
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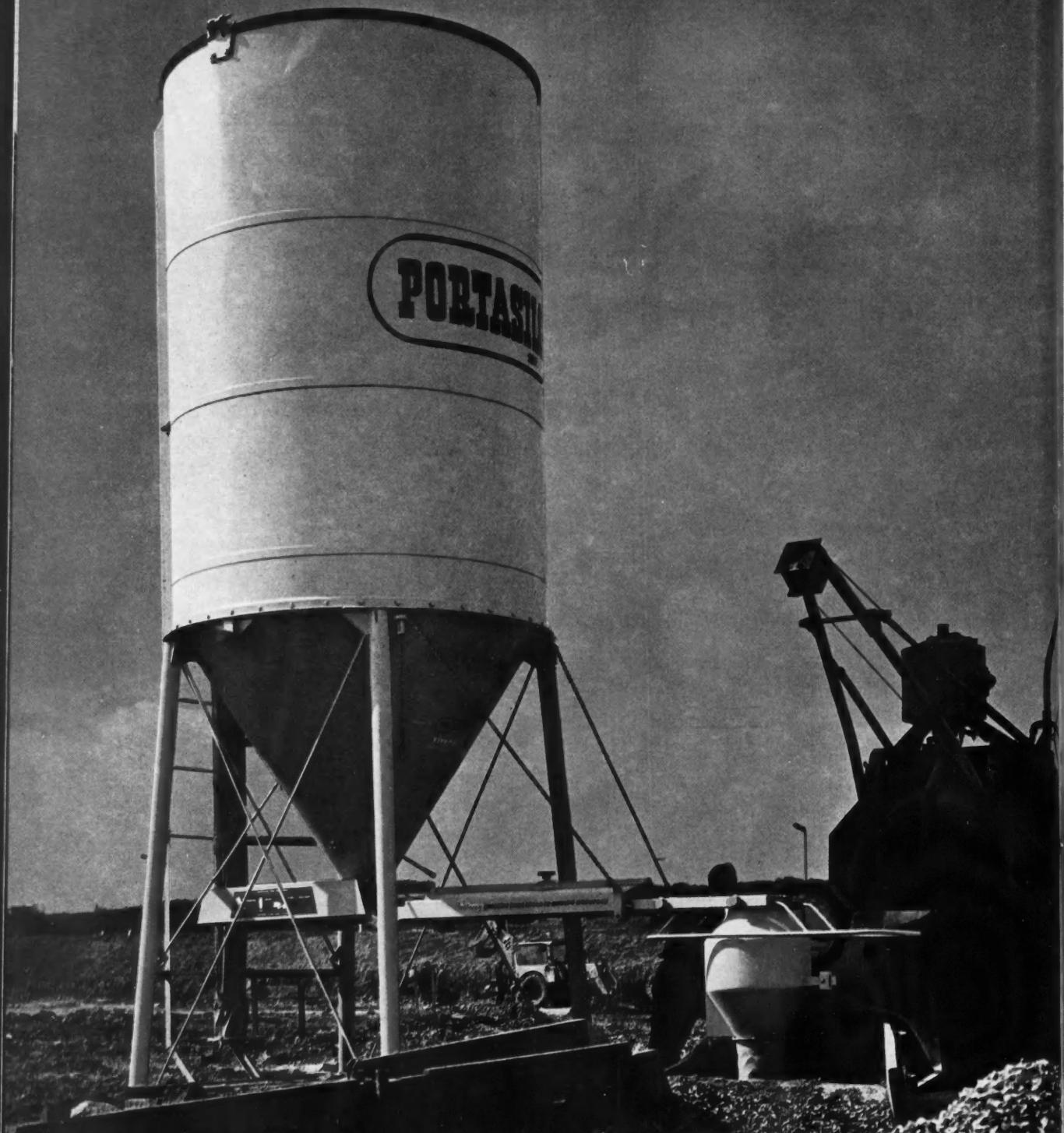
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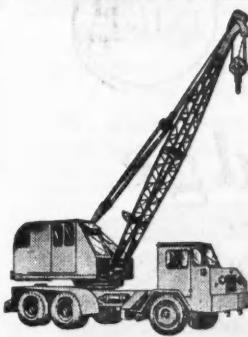
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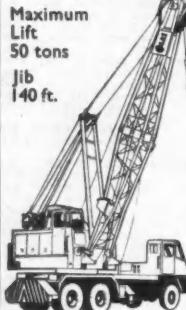
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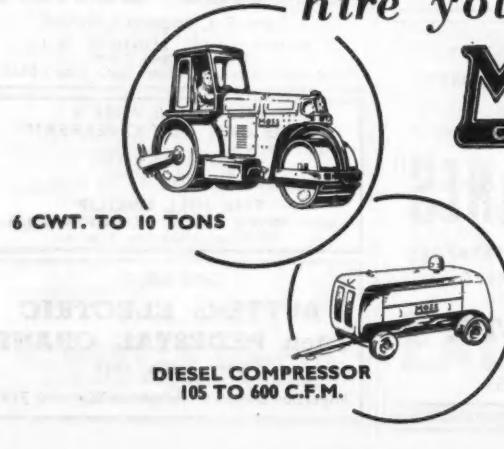
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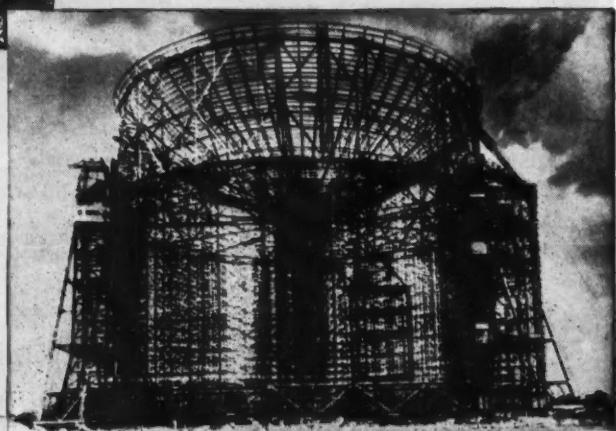
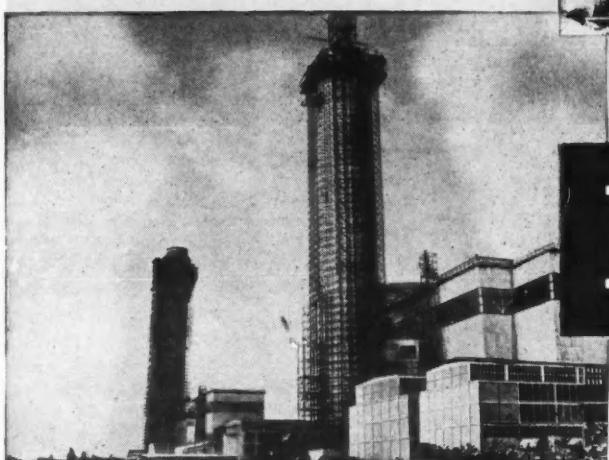
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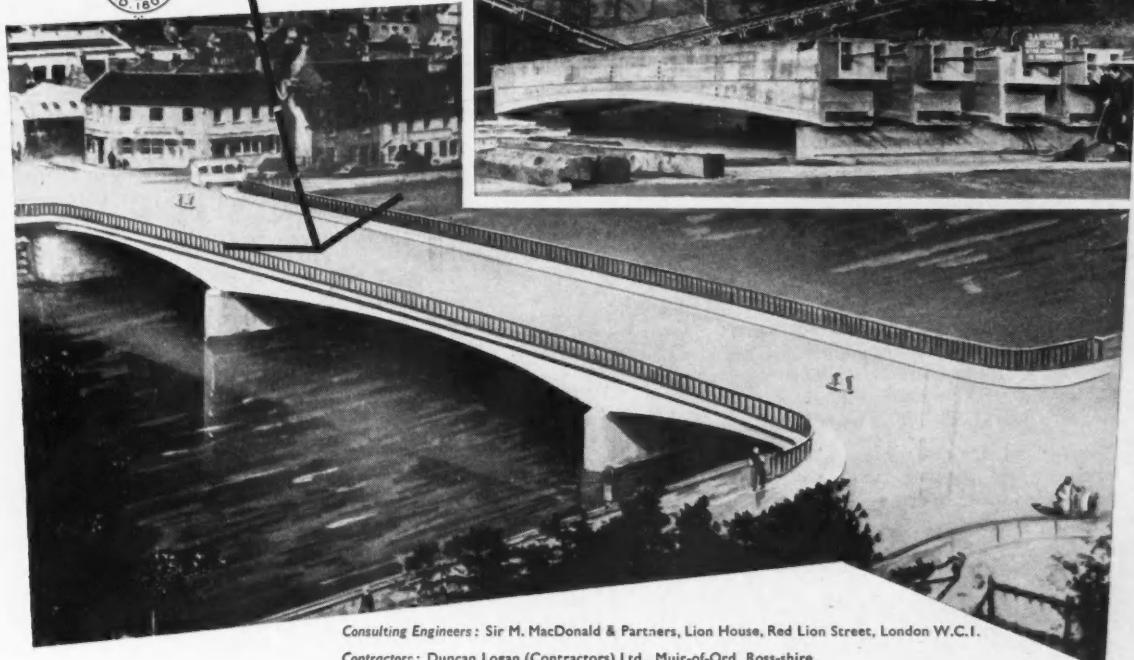
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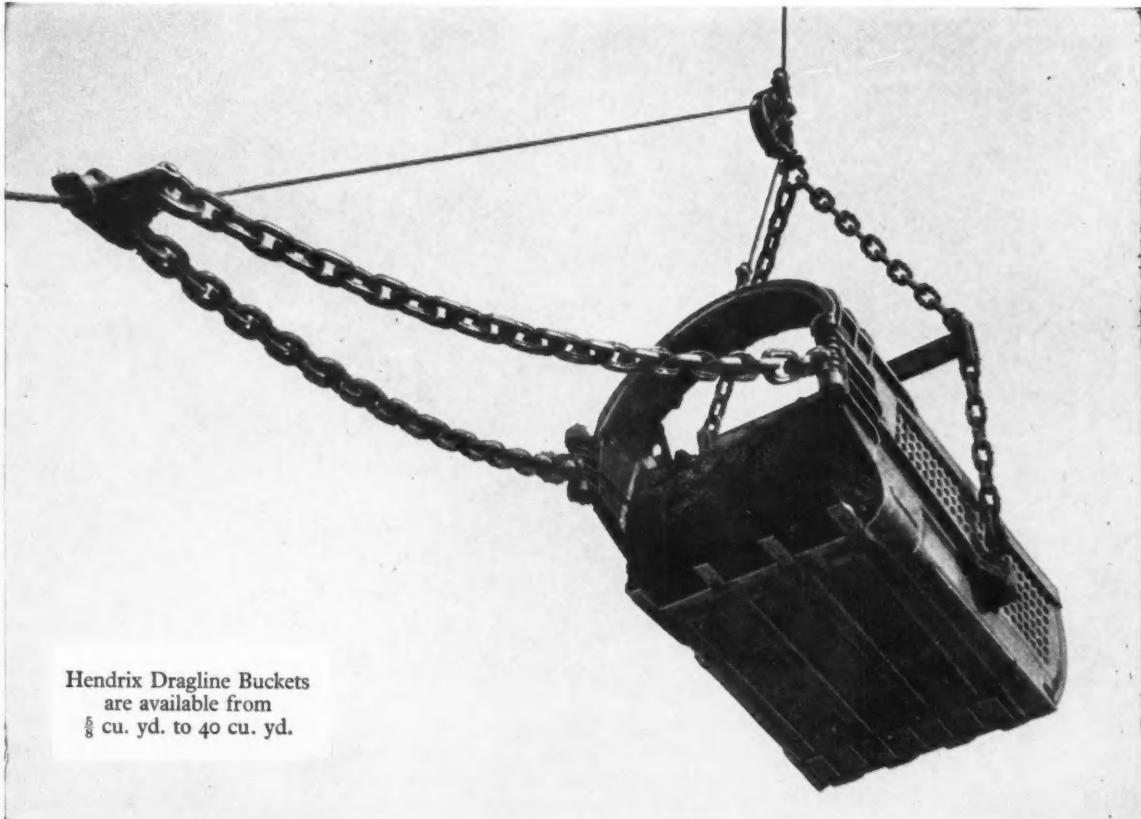
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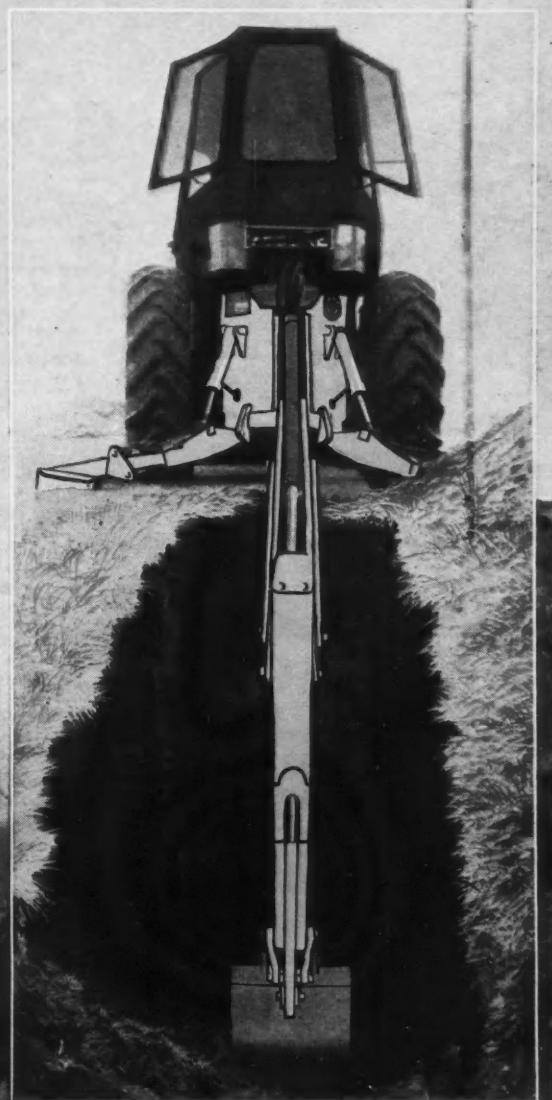
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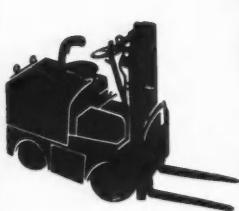
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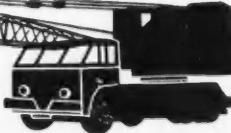
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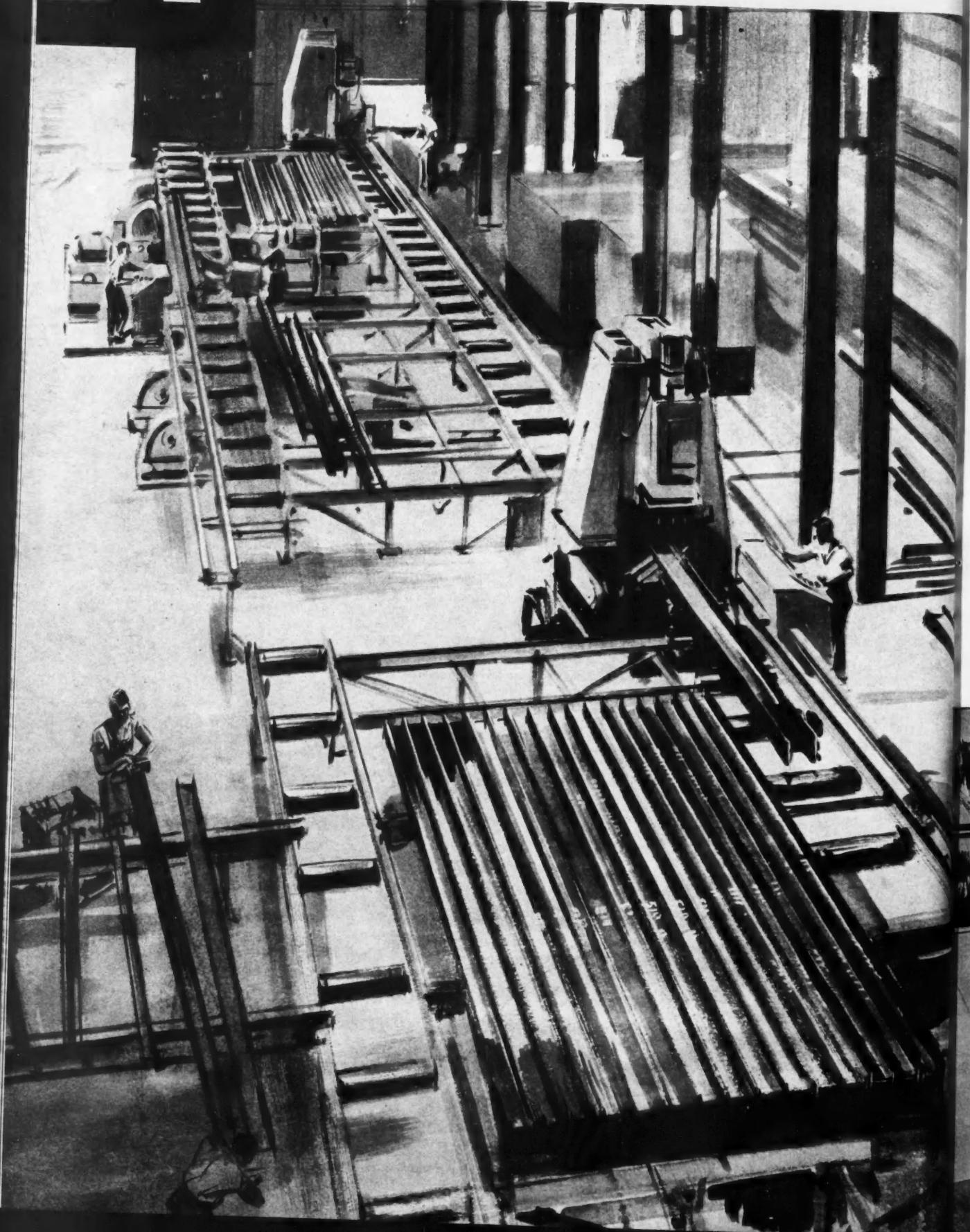
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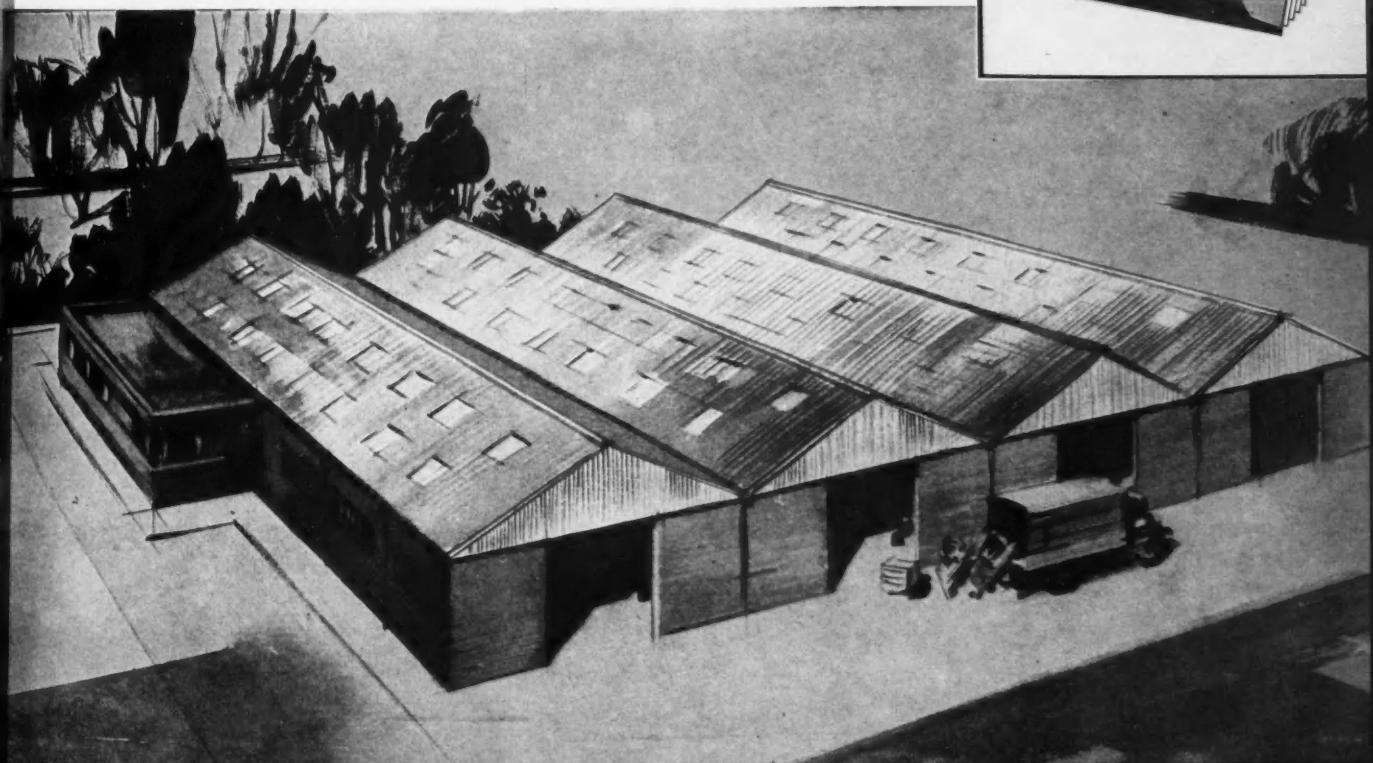
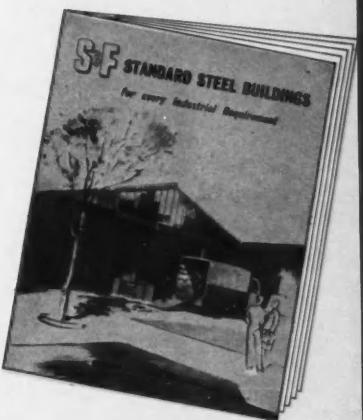
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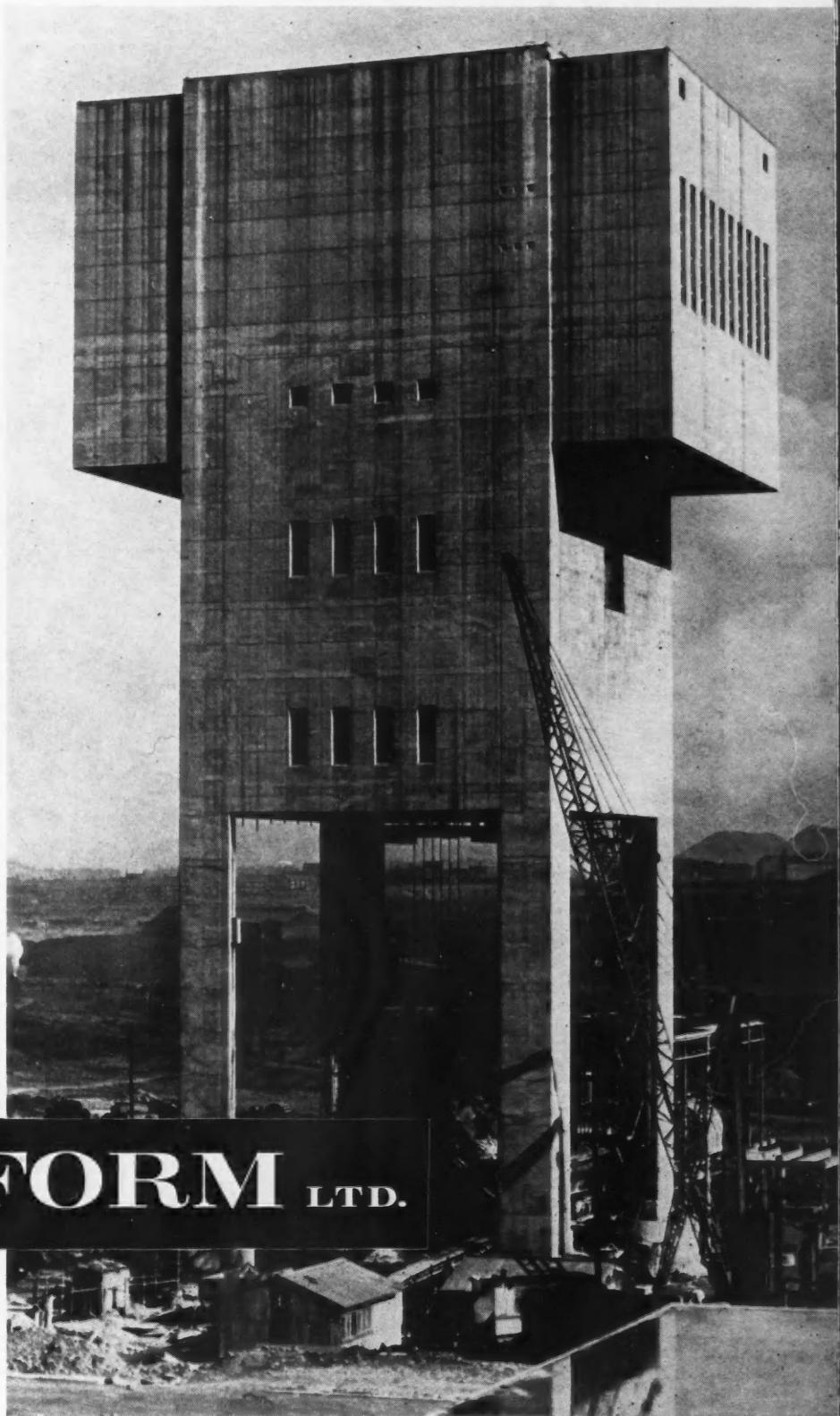
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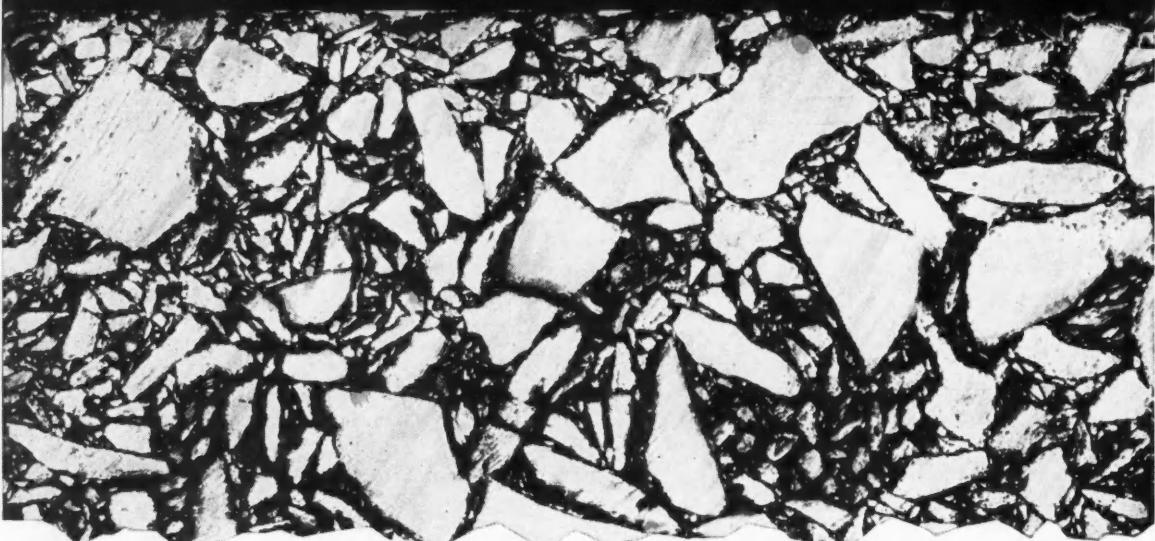
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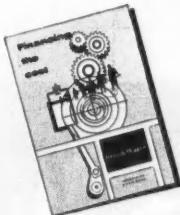


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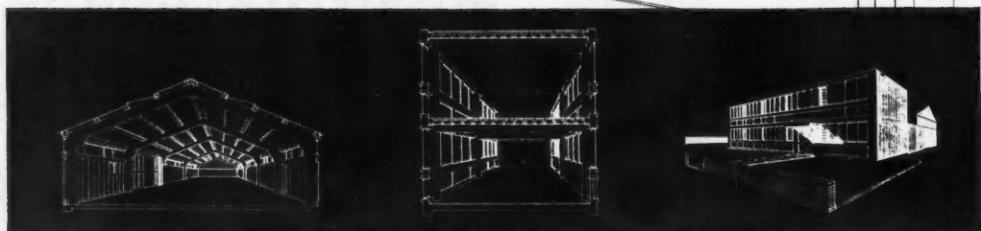
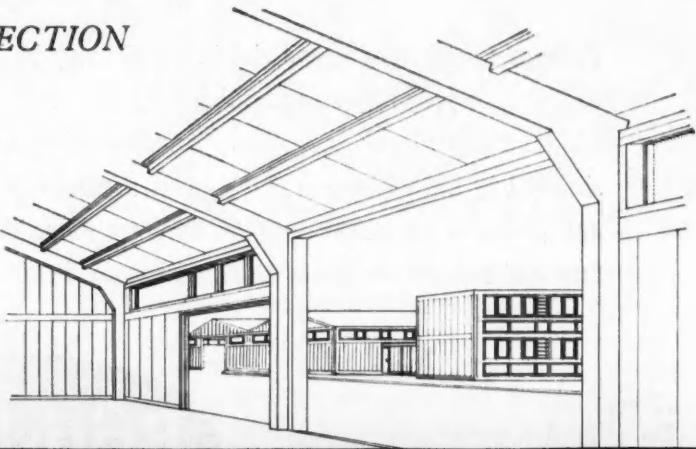
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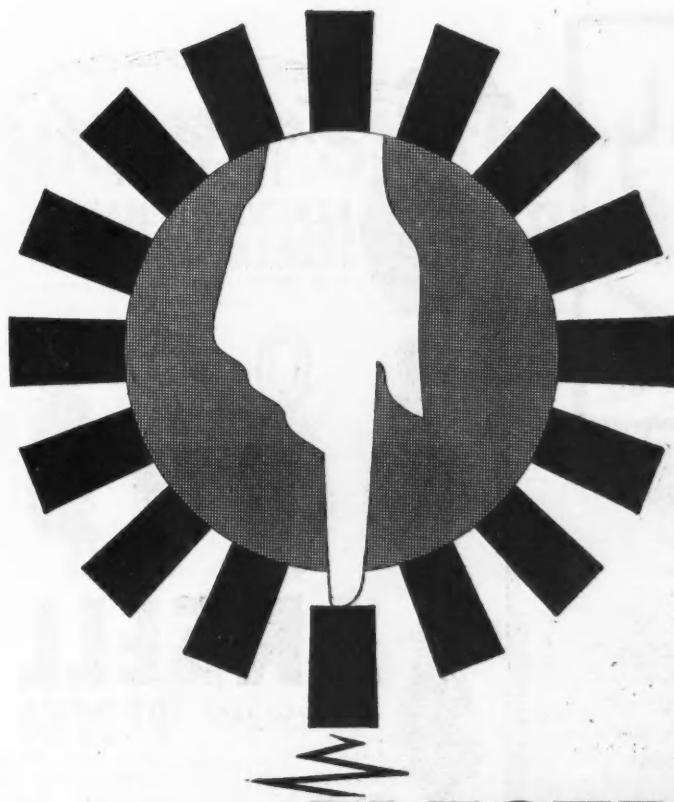
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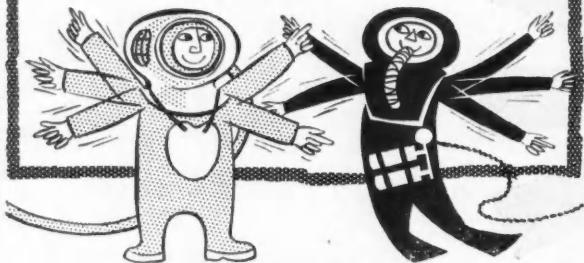
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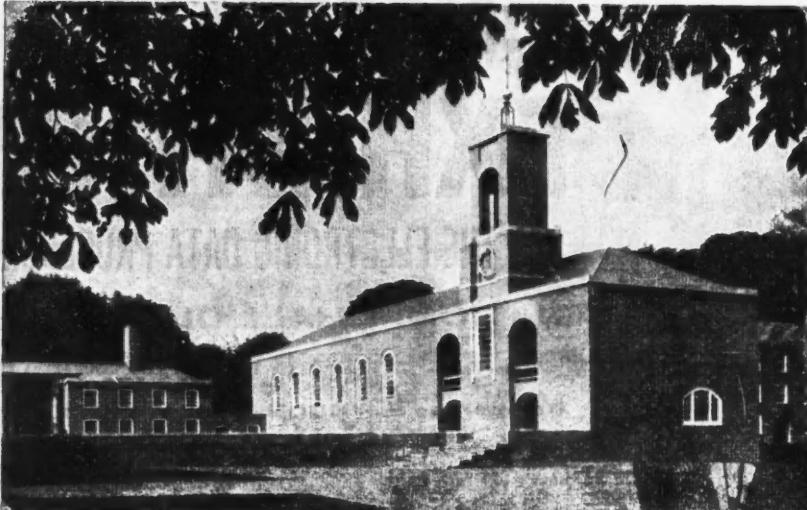
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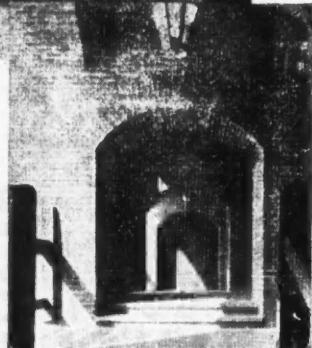
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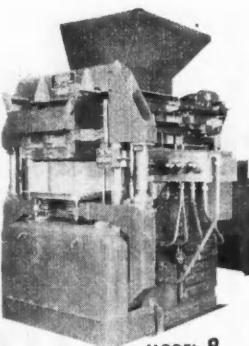
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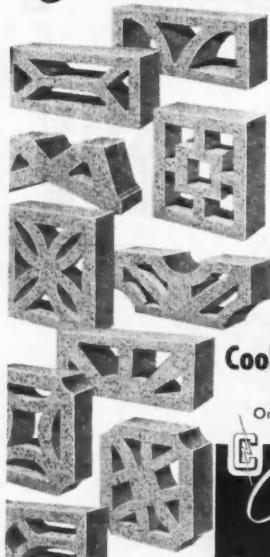


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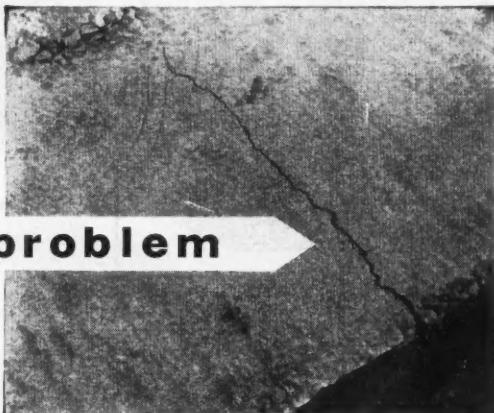
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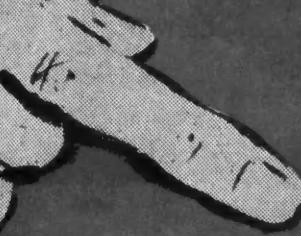
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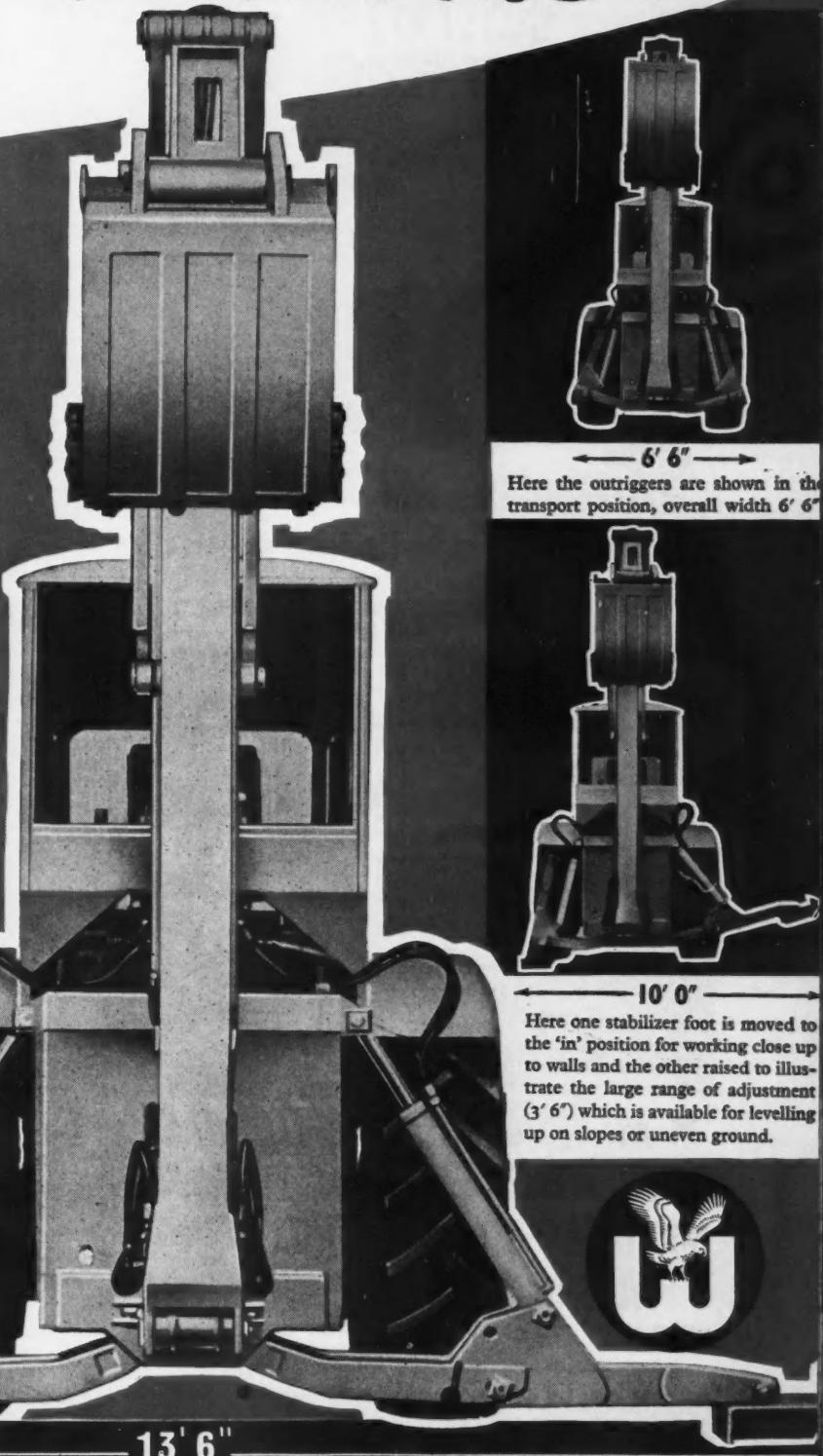
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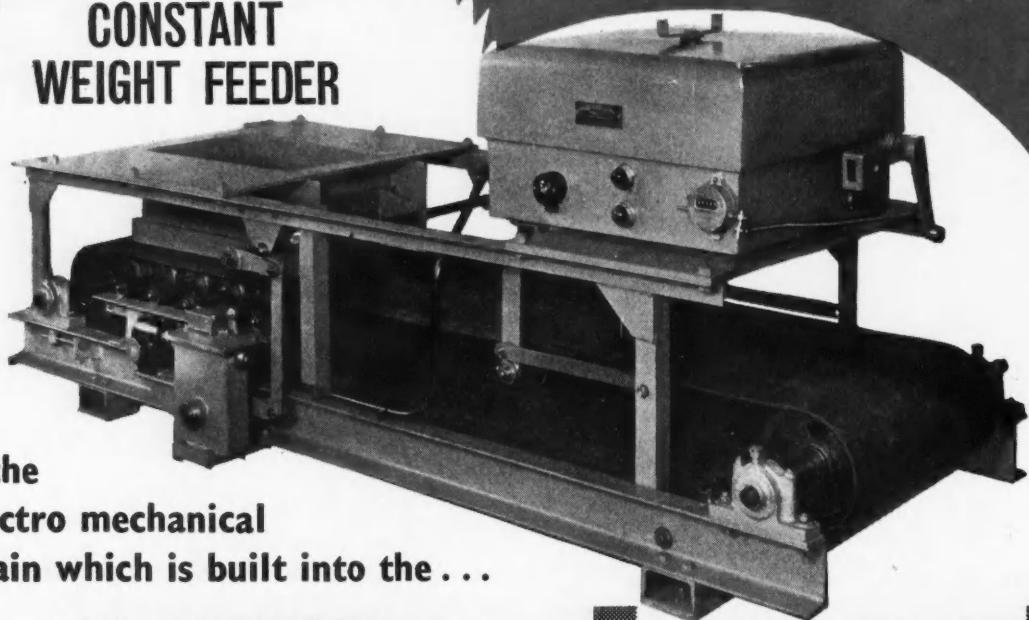
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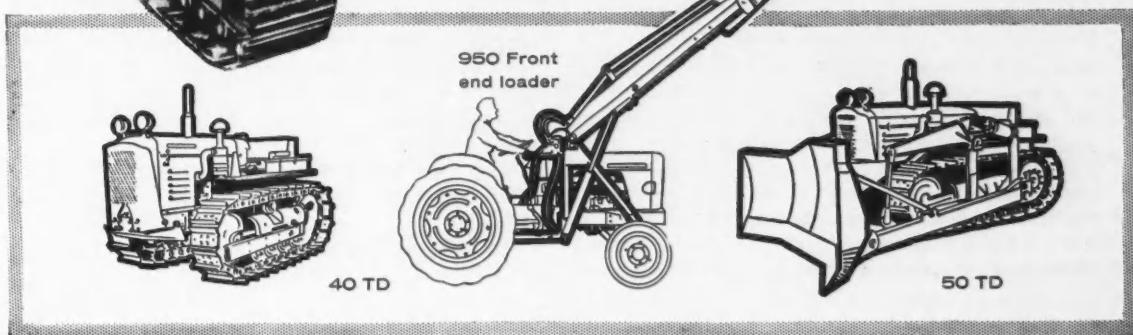
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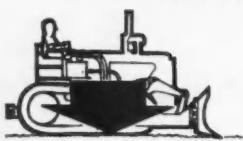
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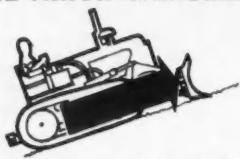
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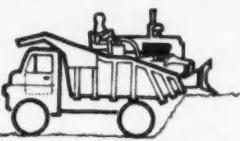
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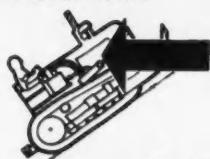
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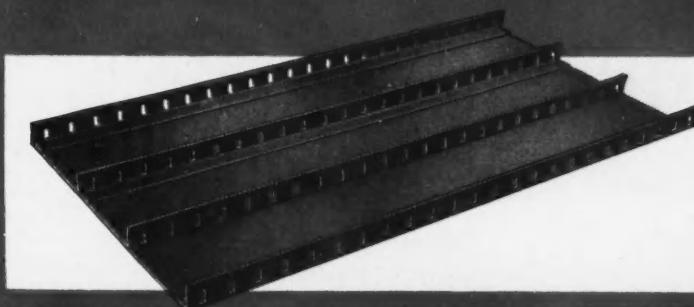


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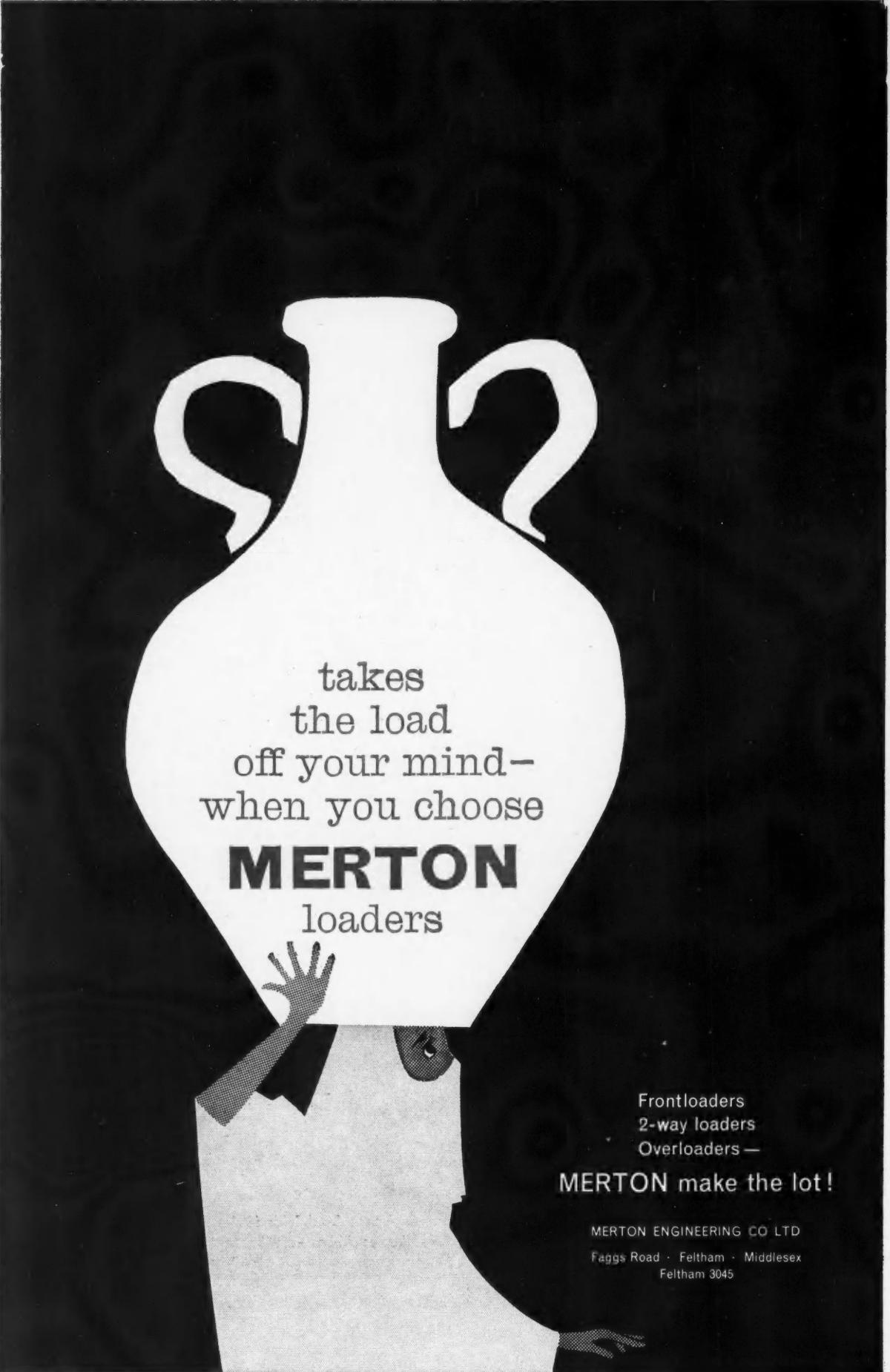
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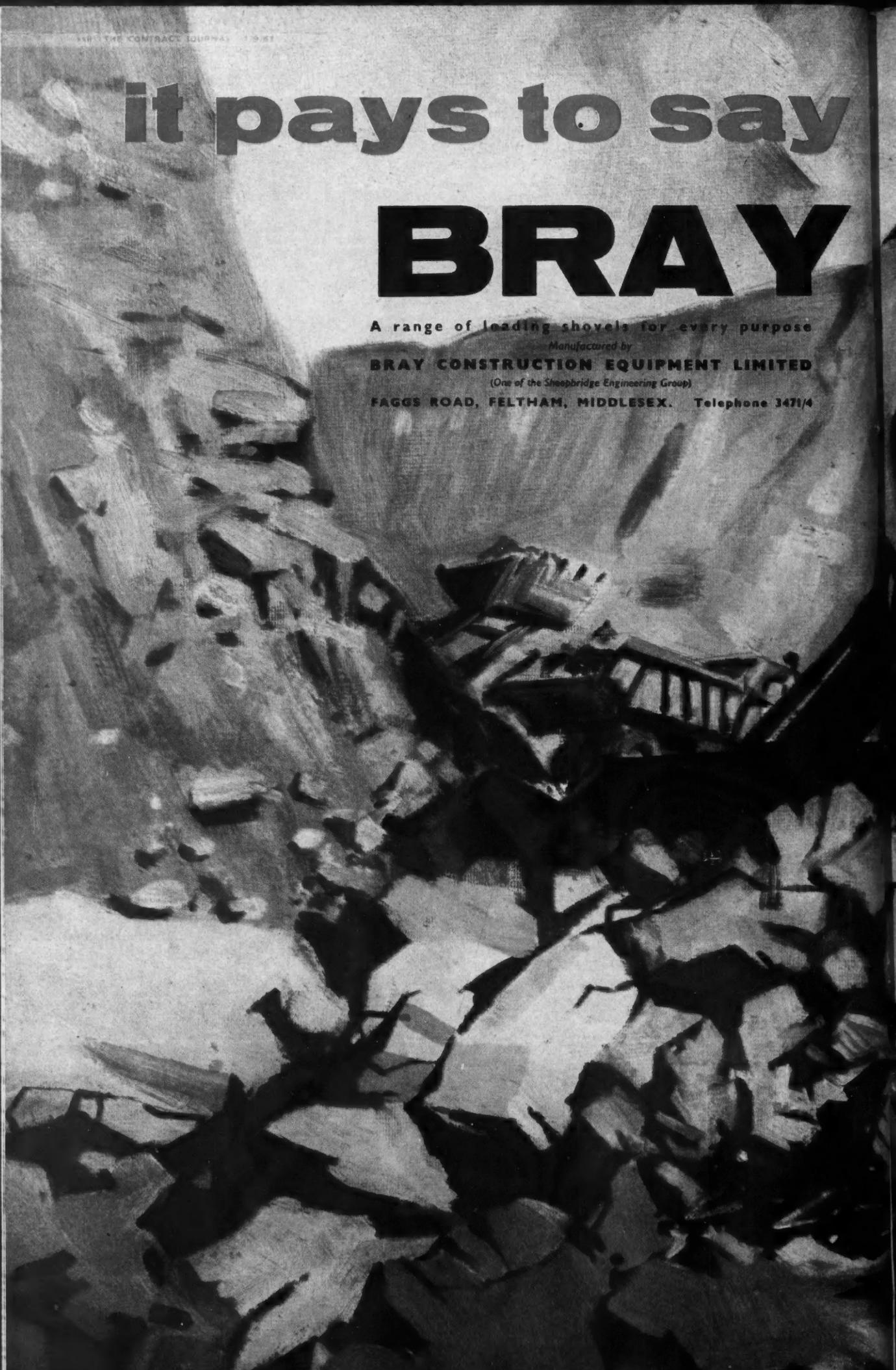
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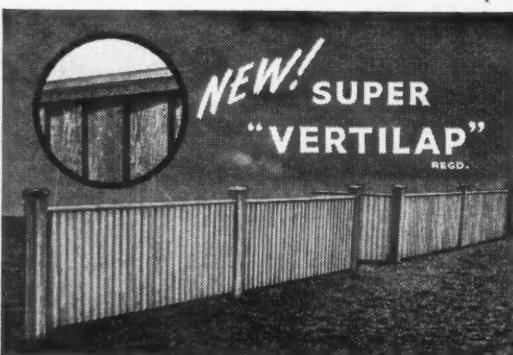
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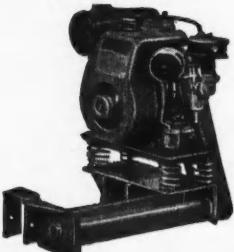
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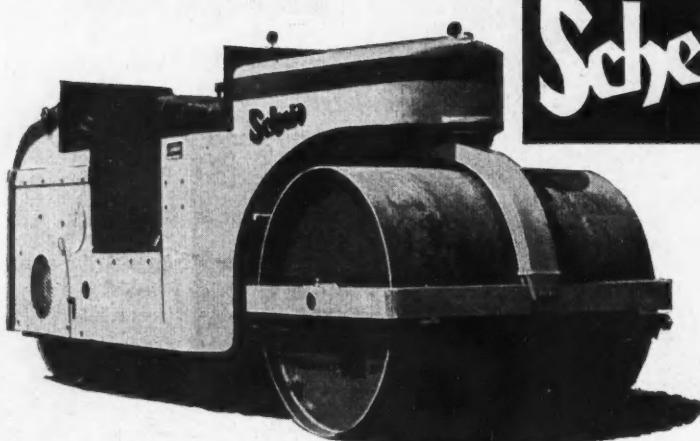
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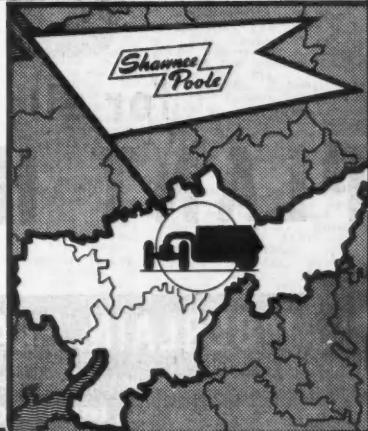


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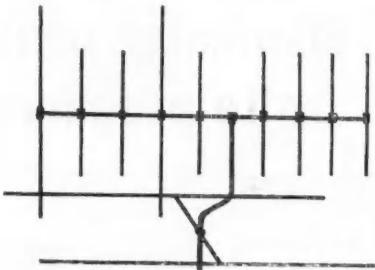
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York 25242

CONTRACTORS' GUIDE TO AGGREGATES

BEDFORDSHIRE

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: VIGilant 2530.) (For details, see Leics.)

DANGERFIELD, F. J., & CO., LTD., 261A Finchley Rd., London, N.W.3. (Tel.: HAMpstead 8044/8.) For all road aggregates, kerbs, sets. (See London.)

FERRERSAND AGGREGATES, LTD., Northampton Rd. Quarries, Rushden (2354/1/2). (See Northants.)

GRAVEL PRODUCTS (HUNTS.), LTD., Little Paxton, St. Neots, Hunts. (Tel.: St. Neots 308.) Pits at Little Paxton, St. Neots, Hunts.; and Blunham, Beds.

HARTIGAN, G. F. X., LTD. (See Buckinghamshire.)

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

ST. IVES SAND AND GRAVEL CO., LTD., 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441/2/3/4.) (See Huntingdonshire for details.)

WEBB, G., CAMBRIDGE, 35 Marpeth Ave., Cambridge. (Tel.: 59966, 53969, 50353 (night).) (See Cambs.)

WINFIELD, HENRY, LTD., Pix Farm Lane, Hemel Hempstead, Herts. (Tel.: Berkhamsted 1208/9.)

Pits at: Leighton Buzzard, Bedford. Building sands.

BERKSHIRE

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: VIGilant 2530.) (For details, see Leics.)

BULLS BROS. S. AND L., LTD., 126A High Street, Winchester. (Tel.: 2264.) (See Hampshire.)

COFF, HARRY A., LTD., Buckhurst Hill, Chigwell, Essex. (Tel.: Ascot 10267.) Sand, all grades of washed aggregates, hardcore, clinker, ashes and hoggins.

CURTIS, J. AND SONS, LTD., Botley Works, Oxford. (Tel.: Oxford 41051/2/3.) Sand and all grades of washed aggregates. Pits at Radley, near Abingdon. (Tel.: Abingdon 441.)

DANGERFIELD, F. J., & CO., LTD., 261A Finchley Rd., London, N.W.3. (Tel.: HAMpstead 8044/8.) For all road aggregates, kerbs, sets. (See London.)

GRUNDON, S. (EWELME), LTD., Ewelme, Oxon. (Tel.: Ewelme 20 and 37.) London Office (Tel.: UXbridge 36511/2/3). All grades washed aggregates. Gates, path, broken stone, hardcore, sand, etc.

HAINES, R. (WITNEY), LTD., Oxford Road, Witney. (Tel.: Witney 42.) All grades washed aggregates, hardcore, pitching and broken stone. Cotswold building and walling stone.

HALL AND CO., LTD., Cardiff Road, Reading. (Tel.: 50458.) Pits at Theale. (Tel.: Theale 373.)

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

JAMES AND CO., LTD., 2C Buckingham Avenue, Slough. Sand aggregates, hardcore, ashes, buldozing and bulk excavation. (Tel.: Slough 20361/2/3.)

LONDON BALLAST CO., LTD. (Tel.: Paddington 5064.)

RALLS OF BATHSTON, LTD., 37 Kempton Lane, Basingstoke, Hants. (Tel.: 85.) Concrete aggregates, building sand, path gravel, hoggins, etc.

BRECKNOCKSHIRE

NASH ROCKS STONE AND LIME CO., LTD., Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire for details.)

SALOP SAND AND GRAVEL SUPPLY CO., LTD., Admaston, Wellington (Tel.: 961). Salop.

BUCKINGHAMSHIRE

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: VIGilant 2530.) (For details, see Leics.)

BICESTER STONE CO., LTD., Stratton Audley, Bicester, Oxon. (Tel.: Stratton Audley 391/2.) Manufacturers and suppliers of all grades limestone, tarmacadam, dry, pitching stone, hardcore, etc.

COFF, HARRY A., LTD., Buckhurst Hill, Chigwell, Essex. (Tel.: Ascot 10267.) (See Berkshire.)

DANGERFIELD, F. J., & CO., LTD., 261A Finchley Rd., London, N.W.3. (Tel.: HAMpstead 8044/8.) For all road aggregates, kerbs, sets. (See London.)

DRIVE, R. W. (WILLESDEN), LTD., 100 Green, Denham, Middlesex. (Tel.: Denham 2241/2/3.)

GRUNDON, S. (EWELME), LTD., Ewelme, Oxon. (Tel.: Ewelme 20 and 37.) London Office (Tel.: UXbridge 36511/2/3). All grades washed aggregates. Path, hoggins, broken stone, building sand, hardcore, pitching and broken stone. Cotswold building and walling stone.

HAINES, R. (WITNEY), LTD., Oxford Road, Witney. (Tel.: Witney 42.) All grades washed aggregates, hardcore, pitching and broken stone. Cotswold building and walling stone.

HALL AND CO., LTD., Bentford, Middlesex. (Tel.: Islsworth 1030/1/2) and Coronation Road, High Wycombe (Tel.: 4360/1). And Gerrards Cross, Pits at: Wraysbury (Middlesex) and Iver (Bucks.).

HARTIGAN, G. F. X., LTD., High Street, Newport Pagnell. (Tel.: 126.) Graded and single-sized graded gravel aggregates to B.S. 55 at Newport Pagnell, Milton, Woburn, M. & B. (Tel.: 2591/2.)

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

JAMES AND CO., LTD., 2C Buckingham Avenue, Slough. Sand aggregates, hardcore, sand, buldozing and bulk excavation. (Tel.: Slough 20361/2/3.)

LONDON BALLAST CO., LTD. (Tel.: Paddington 5064.)

MARLOW SAND AND GRAVEL CO., LTD., Marlow. (Tel.: Marlow 579.)

TUFT MACEY, LTD., Gordon Road, High Wycombe. (Tel.: High Wycombe 2591/2.)

CAMBRIDGESHIRE

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: VIGilant 2530.) (For details, see Leics.)

DANGERFIELD, F. J., & CO., LTD., 261A Finchley Rd., London, N.W.3. (Tel.: HAMpstead 8044/8.) For all road aggregates, kerbs, sets. (See London.)

DICKERSON, M. (CONTRACTORS), LTD., Gloucester Street, Cambridge. (Tel.: Cambridge 569/3/4.)

All grades washed sand and gravel, rebar, fibro-hoggins, clinker crushed granite, crusher and graded concrete, hardcore, brick rubble, ready-mixed concrete (all grades).

CAMbridgeshire

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

MACLAREN BROS. (KENNETT), LTD., gravel, tarred and dressed sand and gravel. All to B.S. specifications. Delivered to any site, Station Rd., Kennett, Cambs. (Tel.: Kentford 333/4.)

ST. IVES SAND AND GRAVEL CO., LTD., 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441/2/3/4.) (See Huntingdonshire for details.)

WEBB, G., CAMBRIDGE, 35 Marpeth Ave., Cambridge. (Tel.: Cambridge 59966, 53969, 50353 (night).) Supplier, at Keeston, 100 ft. below Quillit's Old Mill. All graded washed sand and gravel, reject stone, hoggins, cinder, ashes, brick rubble, pitching, hardcore and granite chippings. All to B.S. Specifications. Delivered to any site in East Anglia.

CARDIGANSHIRE

NASH ROCKS STONE AND LIME CO., LTD., Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire for details.)

SALOP SAND AND GRAVEL SUPPLY CO., LTD., Admaston, Wellington (Tel.: 961). Salop.

CARMARTHENSHIRE

JOHN WILLIAMS AND CO. (CRWBIN QUARRIES), LTD., ROCK PRODUCTS (KIDWELLY), LTD., both at 4 Queen Street, Carmarthen. (Tel.: Carmarthen 7781, 7637, 7031.) All grades aggregate. Tarmacadam, lime, road surfacing by specialists. Barber-Greene and rollers available.

CHESHIRE

BUCKTON QUARRY, broken stone, all grades. (Tel.: Mossley 123.) Or write Main Road, Oldham.

CASTLETON SAND AND GRAVEL QUARRIES, LTD., Pennant End Quarry, Whaley Bridge. (Tel.: Whaley Bridge 139.) Washed sand and gravel.

CAWOOD, WHARTON AND CO., LTD., Fistyll Hill, Quarry, Wharton, near Mold. (Tel.: Llanarmon-y-lan 21/2.) Crushed limestone and tarred macadam, all grades.

CHESHIRE AND NORTH WALES TARRED MACADAM CO., LTD., Llanarmon, near Mold. (Tel.: Llanarmon-y-lan 43.) Hard, broken limestone, dry and coated, to B.S.S. Inquiries to regional office—Market Chambers, Tower Street, Tamal, Stoke-on-Trent. (Tel.: Stoke-on-Trent 88094.)

CROXDON GRAVEL, LTD., Cheshire, Stoke-on-Trent. (Tel.: Tean 393.) Manchester Office: Blackfriars 376/7. Plant capacity, 2,000 tons per day.

HILTON GRAVEL, LTD., Rice Street, Liverpool Road, Manchester, 3. (Tel.: Deansgate 5455 and 5456.) Quarries at Cheshire, Staffs. (Tel.: Tean 241.) And at Longton, Stoke-on-Trent. (Tel.: Longton 32196.)

HULLAND GRAVEL CO., LTD., Cheshire, Stoke-on-Trent. (Tel.: 241/2/3.) Sand, washed sharp concreting sand. Plastering sand. Plant capacity: 2,000 tons per day.

PENMANNAW AND WELSH GRANITE CO., LTD., 7 Picton Road, Liverpool, 15. (Tel.: Sefton Park 7261.) All sizes and gradings of crushed granite aggregate from our Collingwood Dock (Liverpool) Works. Delivered quantity per day; immediate delivery ex stock.

TERNHILL SAND AND GRAVEL CO., LTD., Alington Quarries, near Market Drayton, Staffs. (Tel.: Hale 261/2/3.) (See Shropshire for details.)

TRENTHAM GRAVEL CO., LTD., Lordship Quarries, Winclebridge, near Market Drayton, Shropshire. (Tel.: 2494/1/2.) Sand, washed sharp or natural washed gravel. Twice washed sharp concreting sand. Plastering sand. Plant capacity: 2,000 tons per day.

WARDLOW LIMESTONE, LTD., Cauldon Low, N. Staffs. (Tel.: Oakamoor 366.) (For details, see Staffs.)

CORNWALL

PENTEWAN DOCK AND CONCRETE CO., LTD., Pentewan Works, near St. Austell. (Tel.: Mevagissey 3335/6.) Gwthian Works, near Hayle. Pure silica gravel and grit, concreting building, plastering and asphaltic sands, evan and granite aggregates, all sizes.

WARDLOW LIMESTONE, LTD., Cauldon Low, N. Staffs. (Tel.: Oakamoor 366.) (For details, see Staffs.)

CUMBRIA

GROOMBYS, LTD., Sandhole, Milnthorpe (Tel.: 3281/2/3).

ESK MANUFACTURING CO., LTD., Calish Brickworks, Brisco, Cumbria. (Tel.: Calish 2494/1.) Sand lime bricks (common and coloured facings). Ex Brisco. Concreting aggregates ex Longtown Works (Tel.: 365).

DENBIGHSHIRE

SALOP SAND AND GRAVEL SUPPLY CO., LTD., Admaston, Wellington (Tel.: 961). Salop.

DERBYSHIRE

WARDLOW LIMESTONE, LTD., Cauldon Low, N. Staffs. (Tel.: Oakamoor 366.) (For details, see Staffs.)

DORSET

BULL BROS. S. AND L., LTD., 126A High Street, Winchester. (Tel.: 2264.) (See Hampshire.)

DANESFORD CREEK, LTD., 22 The Broad, Finchley Rd., London, N.W.3. (Tel.: HAMpstead 8044/8.) For all road aggregates, kerbs, sets. (See London.)

DORSET LIMESTONES, LTD., Bumpers Lane, Easton, Portland, Dorset. (Tel.: Portland 2207/8.) Tarred and bituminous materials, foundation materials, lime and gypsum, all for all purposes and to all gradings. Portland stone aggregates and Portland capstone aggregates for reconstructed stone. By road and sea.

HALL AND CO., LTD., 8 Commercial Road, Parkstone, Poole. (Tel.: Poole 523/2.)

MORELYS VERWOOD, LTD., Verwood, Wimborne, Dorset. (Tel.: Verwood 234.) Concrete aggregates, building sand, hoggins, path gravel.

ESSEX

ALRESFORD SAND AND BALLAST CO., LTD., Alresford Creek, near Colchester, Essex. (Tel.: Wivenhoe 314/94.) Pits at Alresford Creek, Brightlingsea, Boxford, Bures and Holland. All grades of washed shingle, concreting sand and building sand. Road and water transport.

BANKS F. LTD., Easton, 100 ft. below Wivenhoe, Essex. (Tel.: Rayleigh 1031/2.) Pits at Great Totham, Heybridge and West Tilbury. All grades of washed material supplied and delivered; also hardcore ashes and bricks.

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., Coslville 1226/7/8, or London: VIGilant 2530.) (For details, see Leics.)

SUCRICKS COMPANY, LTD., Sand and Ballast Pits, Martells, Ardleigh, Colchester. (Tel.: Ardleigh 310.) All grades of washed aggregates, sand, building sand, sand and grit. Standard dry sand accurately graded to building requirements.

DANGERFIELD, F. J., & CO., LTD., 261A Finchley Rd., London, N.W.3. (Tel.: HAMpstead 8044/8.) For all road aggregates, kerbs, sets. (See London.)

FERDINANDS, LTD., The Limes, Garapet, Fenwick Road, Birkdale, Lancashire. (Tel.: 2271/2/3001/2.) Pits at Orsett, near Stanford-le-Hope, and Upminster. All grades of washed aggregates, plastering and building sands supplied and delivered, also hardcore.

HALL AND CO., LTD., Major Road, Romford. (Tel.: Romford 4232/1.) Pits at Upminster, Boreham and Linford, near Grays. Gravel aggregates, concreting, plastering and building sand.

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

HUNNELL, F. A. AND SONS, LTD., Farnham Road, Braintree, Essex. (Tel.: Braintree 151 and 1511.) Graded washed stone, 1in. to rejects; washed concreting sand and washed soft building sand. Glass sand for asphalt. Ready mixed concrete to all grades. Pits at Braintree, Bocking, Basildon End, Hedingham and Alphamstone.

KENRICK, P. LTD., 92 Waterloo Road, Romford, Essex. (Tel.: 42481/2.) Supply and deliver all grades of sand, ballast and shingle, asphalt grits, granite aggregate. Rubbish clearance. Tip available at Upminster.

LEIGH BUILDING SUPPLY CO., LTD., Head Office: 956 London Road, Leigh-on-Sea, Essex. (Tel.: 7126/7/8.) All sizes of washed materials, building sand, hardcore, shingles, bricks, granite.

PETERS AND BARHAM, LTD., 305 South Street, Romford. (Tel.: Romford 44141—7 lines.) High-grade sands, ballast and shingles supplied and delivered; also ready-mixed concrete.

ST. ALBANS SAND AND GRAVEL CO., LTD., London Colney, St. Albans, Herts. (Tel.: Bowmansgreen 2271.) Pits at Meadgate Road, Nazelney; St. Albans Road, Waltham Abbey.

ST. IVES SAND AND GRAVEL CO., LTD., 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441/2/3/4.) Pits at St. Ives and Godfield, near Halstead.

STANLEY CONTRACTS, LTD., Upper Edwards Hall, Easton, 100 ft. below Wivenhoe. (Tel.: Easton 551/3.) Sand and gravel pits at Rochford and Woodham Walter. Graded aggregates supplied or delivered.

WIVENHOE SAND, STONE AND GRAVEL CO., LTD., Wivenhoe, near Colchester, Essex. (Tel.: Wivenhoe 231.) High quality washed aggregates of all grades.

GOULCESTERSHIRE

BENGRY AND SONS, LTD., Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301/4.) (See details under Herefordshire.)

COKE, T. F. (CHELTENHAM), LTD., 267 Gloucester Road, Cheltenham. (Tel.: Cheltenham 4717/4874.) Sand, graded gravel aggregates, hardcore, lime, chippings, talc and bituminous limestone, concrete blocks, stone pavers, etc.

CROMHALL QUARRIES, LTD., Cromhall, Wotton-under-Edge, Glos. (Tel.: Falfield 3461/7.) Concrete aggregates, pre-graded in large quantities. Tarmacadam, tarpaving, bituminous macadam and cobblestone to B.S.S. for hand and machine laying.

GRIFFITHS, A. AND SONS, LTD., Churchdown, Gloucester. (Tel.: Churchdown 3135 and 2216.) Sand, gravel and dredger owners. All grades and types aggregate materials.

HALL AND CO., LTD., Longmoor House, Ashton Vale Road, Bristol. (Tel.: 63001.) Gravel aggregates, concreting, plastering, building and paving sand.

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

NORTH WILTS. QUARRYING CO., LTD., Noble Street, Sherston, Wilts. (Tel.: Sherston 321—3 lines.) (For details see entry under Wiltshire.)

SHAKEMANTLE QUARRY CO., LTD., Cinderford. (Tel.: Cinderford 3197.) "Doux" facing, Engineering and Common Bricks in terra-cotta red and golden brown. Concrete aggregates, ready-mixed and Dolomite cement.

TAYMAC, LTD., Wootton Bassett, near Swindon, Wilts. (Tel.: Wootton Bassett 391—5 lines.) Cotswoold stone, hardcore, washed and graded aggregates, building sand.

CONTRACTORS' GUIDE TO AGGREGATES

MIDDLESEX

TWICKENHAM GRAVEL CO., LTD., Feltham Hill Road, Hanworth. (Tel.: Feltham 2638.)
READ, F. T., LTD., Gales Gardens, Bethnal Green, E.2. (Tel.: Shoreditch 9128/9.) All sands, ballast and shingles supplied and delivered; also ready-mixed concrete. Pits at Edgware (Tel.: Edgware 7000), Montauk Road, N.9 (Tel.: Shoreditch 9128/9), and Fairlop Aerfield, Forest Road, Ilford (Tel.: Hainault 6111/2).
STUART MACEY, LTD., Gordon Rd., High Wycombe (Tel.: High Wycombe 2891/3).

MID-WALES

BENGRY AND SONS, LTD., Longmoor, Kingsland, Leominster, Herefordshire. (Tel.: Kingsland 301/4.) (See details under Herefordshire.)
NASH ROCKS STONE AND LIME CO., LTD., Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire.)
OLD RADNOR TRADING CO., LTD., Quarries in Radnorshire. (Tel.: Kington 421.) (See Herefordshire.)
SALOP SAND AND GRAVEL SUPPLY CO., LTD., Admaston, Wellington. (Tel.: 961.) Salop.
TERN HILL SAND AND GRAVEL CO., LTD., Almington Quarries, near Market Drayton, Staffs. (Tel.: Hales 261/2/3.) (See Staffs. for details.)

MONMOUTHSHIRE

MONMOUTHSHIRE ASSOCIATED QUARRIES, LTD., Head Office: 38 Chepstow Road, Newport, Mon. (Tel.: 5631/2.) Suppliers of all grades of concrete aggregates, road metal, pitching stone, tarmacadam and bituminous macadam, limestone, dolomite and blue pennant stone. Quarries throughout the county.
CHESKEMANTLE QUARRY CO., LTD., Cinderford, Glos. (Tel.: Cinderford 3197.) "Dours" Facing, Engineering and decorative blocks in terra-cotta, red and golden brown. (See Glos.)
WHITECLIFF QUARRIES AND BRICKWORKS, LTD., Cleckford, Glos. (Tel.: 3158/9.) (See Gloucestershire.)

MONTGOMERYSHIRE

NASH ROCKS STONE AND LIME CO., LTD., Presteigne, Radnor. (Tel.: Presteigne 352.) (See Herefordshire for details.)
SALOP SAND AND GRAVEL SUPPLY CO., LTD., Wellington (Tel.: 961.), Salop.

NORFOLK

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: Vigilant 2530.) (For details, see Leics.)
JOHNSTON, P. C. M., LTD., Station Road, Terrington St. Clement, near King's Lynn. (Tel.: Terrington St. Clement 248.) Washed and screened gravel roadstone, washed sharp and fine sands.
ST. IVES SAND AND GRAVEL CO., LTD., 22 The Broadway, St. Ives, Hunts. (Tel.: St. Ives 2441/2/3/4 and Coney Weston 12.) Pits at St. Ives and Coney Weston, near Thetford.
NETTERTON STONE QUARRIES, LTD., Pix Farm Lane, Hemel Hempstead, Herts. (Tel.: Berkhamsted 1208/9.) Pits at Netterton. Concrete aggregate, building sand, etc.
INORPE GRAVEL PITS, LTD., Harvey Lane, Norwich. (Tel.: Norwich 3324/3/4.) Washed and graded aggregates, stone and gravel delivered to all parts of Norfolk and Suffolk.

NORTHAMPTONSHIRE

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: Vigilant 2530.) (For details, see Leics.)
BICESTER STONE CO., LTD., Stratton Audley, Bicester, Oxon. (Tel.: Stratton Audley 391/2.) Manufacturers and suppliers of all grades limestone, tarmacadam, dry, pitching stone, hardcore, etc.
3R VYRICK, LTD., 10, Northgate, Road, High Wycombe, Northants. (Tel.: Rushden 3344/5 and 3345.) All grades of washed and graded aggregates to B.S.S., building sand, hardcore.
DOW-MAC (PRODUCTS), LTD., Tallington, Stamford. All grades of washed sand and gravel. (Tel.: Market Deeping 2091.)

DUSTON STONE QUARRIES, LTD., New Diston, Northampton. (Tel.: Brixworth 278 and 298; Diston 505.) Producers of building and walling stone, roadstone, hardcore, broken stone, ashes, sand, gravel and hoggin. Immediate delivery from quarries at Northampton.

FERRERSAND AGGREGATES, LTD., Northampton Road Quarries, Rushton, Northants. (Tel.: Rushton 2354/5.) Largest producers in the county of all grades of high-quality concrete aggregate to B.S.S. Deliveries throughout Northamptonshire and adjacent counties.

GIBBONS, F. B., AND SONS, LTD., Welby House, Market Deeping, Peterborough. (Tel.: Market Deeping 3321/2383.) (See Lincolnshire for details.)

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) (For details, see Nottinghamshire.)

KETTON STONE CO. (Prop. Andrew's Garage), LTD., Ketton, near Stamford. (Tel.: Ketton 206.) Hardcore, roughcast, washed stone, top soil, silica clay. Quarries at Ketton.

OLD RADNOR TRADING CO., LTD., Quarries in Radnorshire. (Tel.: Kington 421.) (See Herefordshire.)

PETERBOROUGH SAND AND GRAVEL CO., LTD., 127 Eastfield Road, Peterborough. (Tel.: Peterborough 2091.) All grades washed and screened gravel and sand.

PETERBOROUGH QUARRIES, LTD., Sandymead, Peterborough. (Tel.: Market Deeping 2354/5.) Eight pits supplying all grades of hardcore and broken stone. Also wetmix at Tamerton, Wansford. All grades gravel and sand at Maxey.

POLLARD, C., AND SON (TALLINGTON), LTD., Wall House, Langtoft, Peterborough. (Tel.: Market Deeping 2140.) (See Lincolnshire for details.)

STORTON, F. E., LTD., Weedon Road, Northampton. (Tel.: Northampton 3358.) Producers of washed gravel and sand to B.S.S.

NORTH WALES

CARWOOD, WHARTON AND CO., LTD., Platyll Gwyn Quarry, Llanarmon, near Mold. (Tel.: Llanarmon 277.) Crushed limestone and tarmacadam, all grades.

CHESHIRE AND NORTH WALES TARRED MACADAM CO., LTD., Llanarmon, near Mold. (Tel.: Llanarmon-y-llyn 43.) Hard, broken limestone; dry and coated to B.S.S. Inquiries to Registered Office—Market Chambers, Tower Square, Tunstall, Stoke-on-Trent. (Tel.: Stoke-on-Trent 8004.)

ENSTON, LTD., Llynn Isaf Quarry, Clynnogfawr, Caernarvon. (Tel.: Clynnogfawr 297/8.) All sizes crushed, washed natural sand and gravel. Highest quality. Precast concrete products, ex our Griffiths Crossing Factory, Caernarvon. (Tel.: Caernarvon 2535/6.) Crushed granite ex our quarry, Pengwern, Glyndwr Quarries, Ltd., Treffryw, Llanrwst, Denbighshire. (Tel.: 38.)

GWALCHMIAL GRANITE QUARRY, Anglesey. Producers: The North Wales Construction Co., Ltd. (Tel.: Gwalchmial 221.) All sizes dry and coated granite materials, hardcore, filling, ready mixed concrete, etc.

PEHMAENNAWAU AND WELSH GRANITE CO., LTD., Quay Street, Penrhynfaenau (Tel.: 2556/8) and at Trevor. (Tel.: Clynnogfawr 223.) Caernarvonshire. All sizes and gradings of crushed granite aggregate. Any quantity per day; immediate delivery ex stock. Coated granite also available.

RUTHIN AND DENBIGH TARMACADAM CO., LTD. (a member of the Lunt, Comley and Pitts Group), Denbigh. (Tel.: Denbigh 261.) Lime, limestone, carbide lime, talc, gypsum, etc. Also supplies to Lunt Bros. Ltd., Gazette Buildings, 169 Corporation Street, Birmingham. (Tel.: Central 7408.) and Lunt Bros. Ltd., Stourbridge (Tel.: 5201—8 lines).

TERN HILL SAND AND GRAVEL CO., LTD., Almington Quarries, near Market Drayton, Staffs. (Tel.: Hales 261/2/3.) (See Staffs. for details.)

NOTTINGHAMSHIRE

AIZLEWOOD, DOUGLAS E., Bow Bridge, Rotherham. (Tel.: Rotherham 2622.) Crushed and graded limestone; all grades of washed gravel and sands.

BARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: Vigilant 2530.) (For details, see Leics.)

GLEN QUARRIES, LTD., Central Chambers, Wellgate, Rotherham. (Tel.: Rotherham 5223.) Crushed and graded stone, concreting sand, building sand, plastering sand and crushed gravel; could be collected ex quarry or delivered.

GUNTHORPE GRAVELS (1958), LTD., (Tel.: Nottingham 77357; and Works: Lowdham 2131.) (An associate company of T. C. Campbell, Ltd.) All grades washed gravel and sand to B.S.S.

HOVERINGHAM GRAVELS, LTD., Hoveringham, Nottingham. (Tel.: Lowdham 3171—15 lines.) Quarries at Hoveringham, Holme Pierrepont, Colwick, Measham, Newark. Other quarries throughout the country—deliveries in 21 counties. All grades of washed gravel and sand to any specification. Crushed quartzite for surface dressing of roads a speciality. Combined plant capacity 20,000 tons per day.

NEWARK GRAVEL AND CONCRETE CO., LTD., Grove St., New Bolderton, Newark, Notts. (Tel.: Newark 401.) All grades washed sand and aggregates.

NORTH NOTTS. GRAVEL CO., LTD., Bellmoor, Retford, Notts. (See Yorkshire.)

SALISBURY AND WOOD, LTD., Matlock. (Tel.: 272/273.) (For details, see Derbyshire.)

OXFORDSHIRE

SARDON HILL QUARRIES (ELLIS AND EVERARD), LTD., near Leicester. (Tel.: Coalville 1226/7/8; or London: Vigilant 2530.) (For details, see Leics.)

BICESTER STONE CO., LTD., Stratton Audley 391/2.) Manufacturers and suppliers of all grades limestone, tarmacadam, dry, pitching stone, hardcore, etc.

3R VYRICK, LTD., 10, Northgate, Road, High Wycombe, Northants. (Tel.: Rushden 3344/5 and 3345.) All grades of washed and graded aggregates to B.S.S., building sand, hardcore.

DOW-MAC (PRODUCTS), LTD., Tallington, Stamford. All grades of washed sand and gravel. (Tel.: Market Deeping 2091.)

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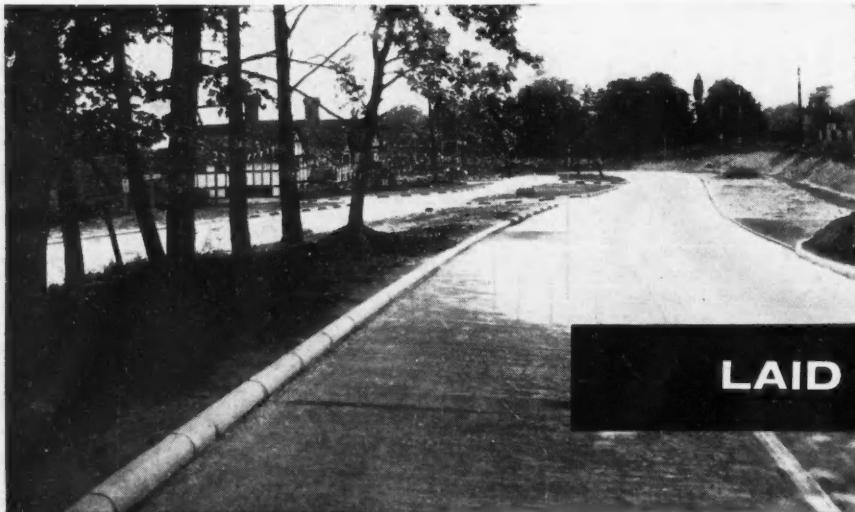
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